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Edited by HENRY C. PEARSON—Offices, No. 150 Nassau Street, NEW YORK.

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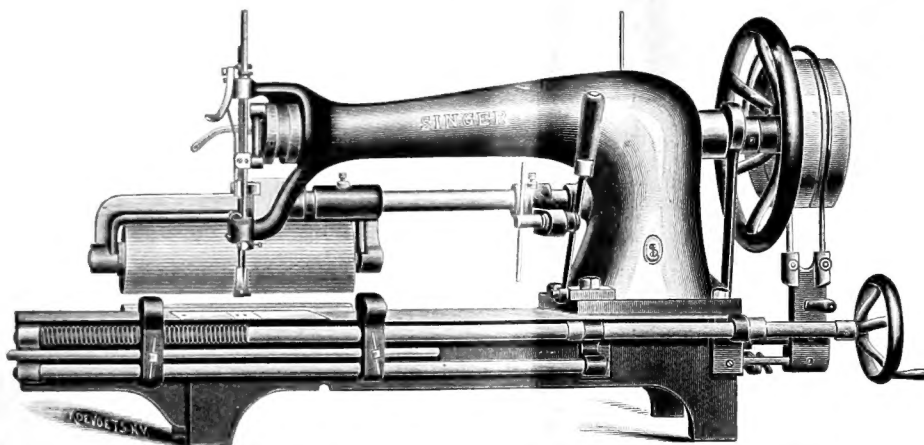
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MR. COOK'S REPORT ON RUBBER.

AS the result of a preliminary study of rubber culture in Guatemala and southern Mexico, Mr. O. F. Cook, of the botanical staff of the department of agriculture at Washington, has written a report* that merits careful study by all who are interested in the cultural production of rubber. These studies, which are not yet concluded—for Mr. Cook is already on a second visit to the southern country—are directed primarily to the question whether rubber planting is advisable for Porto Rico and the Philippines, in the economic development of which islands the Washington authorities now have a concern. It is recognized, however, in the preparation of this report, that it will have a more immediate and popular interest in connection with the subject of investments in rubber culture in nearer regions, by citizens of the United States, in regard to which the agricultural office has been in receipt of many inquiries.

While the author does not presume to offer final conclusions, as a rule, his report does not thereby lack in interest and value, by reason of the many questions to which he gives consideration—problems of a practical nature that require solution before rubber culture can be regarded as having a fixed basis. Briefly, the report can be summarized as asserting that the practicability of the agricultural production of rubber has been demonstrated, but that it bids fair to become very profitable only under favorable natural conditions, and these conditions are as yet imperfectly understood.

The report is consistently conservative throughout, the author avowing that it is not his intention to discourage the rubber planter, or investors in planting companies, but merely to set forth the difficulties and uncertainties that beset rubber culture, from the desire that unnecessary mistakes be avoided. But from the remark that "many cultural mistakes are still made with plants that have been in domestication for thousands of years," it may be inferred that the starting of rubber plantations need not necessarily be deferred until the definite solution of all the problems bearing upon this subject which may occur to the scientific investigator. Indeed, the truth is to be arrived at only by persistent experimenting on a broader scale than has been afforded in botanical gardens, where the results obtained, according to Mr. Cook, "have at most but a local value and cannot be accepted as final."

Rubber culture is not a new proposition, since its beginnings date back thirty years or more. With an annual plant, thirty years of experience should teach us much, but for dealing with long lived trees that period is short, and it need not be a matter of surprise that rubber culture, in many respects, is still in an experimental stage. Most of the earlier attempts resulted in failure, which might have been predicted simply on the grounds of probability, and many people concluded that the production

*The Culture of the Central American Rubber Tree. By O. F. Cook, botanist in charge of investigation in tropical agriculture. (United States Department of Agriculture. Bureau of Plant Industry—Bulletin No. 49). Washington: Government Printing Office, 1903. [8vo. Pp. 86 + 18 plates.]

of rubber by planting trees was impracticable. On the other hand, when some success began to be achieved, the fact was too often taken for granted as a verification of the original estimates of yield and profits, in spite of some of these having been disavowed by their authors. The practicability of rubber culture having been established, non resident investors have been induced to take an interest in plantations, sometimes by too liberal promises of returns, and Mr. Cook's warning is that success and large profits are not assumed without the caution and discrimination required for other branches of agriculture and other lines of investment.

To take up the more scientific features of this report, it is pointed that the essential requirements of *Castilloa*—the rubber tree specifically dealt with—yet require to be more fully known. Mr. Cook inclines to the view that it is not essentially a forest tree, but even if it were, it does not follow that it should be planted under the same conditions as in the wild state. Our cultivated plants generally have much better conditions than their wild relatives. Planting *Castilloa* in the undisturbed forests he regards as clearly inadvisable; but as to the proper degree of shade or its absence, "each planter will need to use his best judgment in determining what local conditions require — — — No general principles will determine what is best, because no one method is applicable everywhere."

It has been found possible with many plants to increase the average percentage of starch, sugar, or oil through the planting of selected seed or cuttings, and Mr. Cook suggests the probability that a like result is possible in the case of rubber. There is, in the natural state, no uniformity in the yield of the rubber tree of any given species, nor is such uniformity to be looked for in planted rubber. There are conditions under which rubber trees may not yield any *latex*, whether wild or cultivated. These and other considerations suggest the importance of great care in planning a plantation of rubber, which at best requires years to become productive. Moreover, there is more than one species of *Castilloa*, and all are not of equal value as rubber producers.

Clearly there is a wide field for scientific investigation, to demonstrate not only the proper location and other conditions for planting rubber trees, but also the best method of extraction of *latex* and preparation of the commercial product. Then the rubber planter may order his work with the same confidence of results that the farmer now feels in the case of the crops that long have been staple. But we venture to say that long before this state of things arrives, very much rubber will have been obtained from plantations. We might suggest that many of these problems relate equally to the extraction of rubber in the forests, the total of which has now become enormous, without any assistance thus far from science. This is not by way of disparagement of such work as Mr. Cook is doing, however, which we welcome as promising results of great importance to the rubber planting interest.

The rubber planting world, indeed, is to be congratulated upon a manifestation of interest in this subject by an institution of the standing of our agricultural department.

FOREIGN ENTERPRISE IN BRAZIL.

THE alien who, in seeking to supply the demand in his own country for what is called "Pará rubber," settles on the Amazon river to-day, places himself almost beyond the pale of civilization. If he acquires a so called rubber "concession" and the natives steal all his rubber, rendering his investment fruitless, the laws of the Amazon states leave him without redress. In case of any legal dispute, such as may arise under the laws of any civilized country, the outsider, under the legal codes in force on the Amazon, may as well consider himself non suited in advance.

Now it is not intimated here that the common law of England—the basis of the jurisprudence of largely by far the greater part of the rubber consuming world of to day—should be recognized on the Amazon. But the states in that region must recognize the potency of some European code of law antedating their existence as states, guaranteeing the rights of individuals and the sanctity of contracts. If they do not, the necessity remains for nations based upon principles of modern civilization to regard the communities on the Amazon as not yet having attained to an equal status with them.

Within a few decades past, capital from other than Brazilian sources has been invested—and on a large scale—in rubber estates under Brazilian control. The failure to realize a large production of rubber must be ascribed either (1) to deception on the part of the Brazilian vendors; (2) to the robbery of the purchased estates, without protection from Brazilian laws; or (3) to a lack of business acumen on the part of the foreign investors. It happens, by the way, that, regardless of the small shipments by the foreign investors, the total exports from the districts referred to have amounted to the normal figure; besides, it would be somewhat singular if Anglo-American investments should prove unsuccessful only on the Amazon and its tributaries.

What should be regarded as a higher aim for statesmanship in Grão Pará and Amazonas than the utmost development of the trade in rubber in those regions? How many holders of the suffrage in the two states named are prepared to contribute capital for the exploitation of rubber therein? What does the Brazilian, properly so called, to develop what is thus far the most important economic interest along the Amazon? Nothing. Hence the desirability of encouraging the investment of capital there by outsiders. So long as North America and Europe are prepared to pay liberally for the chief product of the Amazon states it is most unreasonable that their citizens should continue to be treated as brigands while attempting to do business on that river.

THE MOST PALPABLY DISHONEST ADVERTISING we remember to have seen has been carried on for several months past, on a vast scale, purporting to solicit subscriptions to the capital stock of a company formed to trade in rubber in Venezuela. We have assumed that not all of the persons advertised as officials of this company have been aware of how the public was being deceived in their name, and now that the advertising has ceased, we may say that in exposing the swindle this Journal

has not intended any attack upon any individual who may have been connected with the business. But the incident should serve as a warning to honest men generally to be more careful about lending their names to the promotion of stock selling schemes.

SOME CONCLUSIONS REGARDING RUBBER CULTURE.

BY ORATOR F. COOK.*

THE culture of the Central American rubber tree has passed the experimental stage in the sense that the practicability of the agricultural production of rubber has been demonstrated, but on the other hand it has been ascertained that the tree may thrive where it will yield little or no rubber. Under favorable natural conditions the culture of *Castilla elastica* bids fair to become very profitable, but the experimental determination of the factors which influence the production of rubber has scarcely begun. [The spelling *Castilla*, instead of *Castilloa*, has been adopted at Washington, on account of its being the original form.]

In southern Mexico and Central America the regions well adapted to the culture of *Castilla* are much more limited than has been supposed. The presence of wild *Castilla* trees is not a sufficient evidence that a locality is suited to commercial rubber culture.

Differences in the yield of rubber are not due merely to the existence of different species and varieties of *Castilla*, but are also controlled by external conditions.

The functions of the rubber milk in the economy of the plant are not well understood or agreed upon by botanists, but there are numerous reasons for holding that in *Castilla* and many other plants it aids in resisting drought.

A continuously humid climate is not necessary to the growth and productiveness of *Castilla*; the indications are rather that the quantity of milk and the percentage of rubber are both increased by an alternation of wet and dry seasons.

In its wild state *Castilla* does not flourish in the denser forests, but requires more open situations. It is confined to forest regions only by the perishability of its seeds.

Castilla thrives better when planted in the open than in the dense forests; even young seedlings are not injured by full exposure to the sun, providing that the ground does not become too dry.

The planting of *Castilla* under shade or in partially cleared forests is to be advised only on account of special conditions or as a means of saving labor and expense.

The loss of the leaves in the dry season may be explained as a protection against drought, and does not indicate conditions unfavorable to the tree or to the production of rubber.

The falling of the leaves of *Castilla elastica* in the dry season renders it unsuitable as a shade tree for coffee or cacao. In continuously humid localities where the leaves are retained shade trees are superfluous and the yield of rubber declines.

The desirable features of shade culture, the shading of the soil, and the encouragement of tall upright trunks, are to be secured by planting the rubber trees closer together rather than by the use of special shade trees. Planting closer than 10 feet, however, is of very doubtful expediency.

The percentage of rubber increases during the dry season and diminishes during the wet. The flow of milk is lessened in dry situations by inadequate water supply, but at the beginning

of the rains such trees yield milk much more freely than those of continuously humid localities. The claim that more rubber is produced in the forest or by shaded trees seems to rest on tapping experiments made in the dry season.

Continuous humidity being unnecessary, the culture of *Castilla* may be undertaken in more salubrious regions than those to which rubber production has been thought to be confined; the experimental planting of *Castilla* in Porto Rico and the Philippines becomes advisable, but extensive planting in untried conditions is hazardous.

No satisfactory implement for the tapping of *Castilla* trees has come into use. Boring and suction devices are excluded by the fact that the milk is contained in fine vertical tubes in the bark, which must be cut to permit the milk to escape.

In British India it has been ascertained that the Pará rubber tree may be repeatedly tapped on several successive or alternate days by renewing the wounds at the edges. The yield of milk increases for several tappings and the total is unexpectedly large. It is not yet known whether multiple tapping is practicable with *Castilla*, or whether this new plan may not give the Pará rubber tree a distinct cultural advantage over *Castilla*.

The gathering of rubber from trees less than eight years old is not likely to be advantageous; the expense of collecting will be relatively large, and the quality of such rubber is inferior, owing to the large percentage of resin.

The rubber of *Castilla* is scarcely inferior to that of *Hevea*. The supposed inferiority is due to substances which can be removed from the milk by heat and by dilution with water.

THE ECONOMY OF RUBBER COLORS.

EVERY one familiar with the use of dry pigments in rubber compounding has noted the remarkable differences, at any given price per pound, in the coloring effect obtainable from colors of the same designation. The variations in this regard are often so great that a serious question of economy is involved in making a selection.

Most of the dry colors used in rubber work are not chemically inert, like the ordinary fillers, barytes, silica, whiting, and asbestine, and therefore should not be used beyond the amounts necessary to produce the desired color. The strongest pigment—that is, the one capable of yielding the greatest coloring effect, at a given price per pound—is invariably the one to use. The various grades of color of the same maker are graded in coloring quality to correspond with the prices asked, but between two makers of ostensibly the same goods there is not infrequently a variation in coloring value of several hundred per cent., when compared by "money equivalent weight." By this term is meant the amount of each color purchasable for a given sum.

The strength of a pigment, or its ability to impart its color when mixed in a rubber compound, depends principally on its degree of fineness. Each particle of pigment, however finely divided, has the same color quality as every other particle in the same pigment, and consequently the greater number of particles in a given bulk the larger the amount of material to which the pigment can impart its color. In other words, the more finely ground the pigment, the more adulteration or dilution it can stand. Every color should thus be reduced to impalpable fineness. Whether this has been done or not with any sample is easily determined by rubbing a pinch of the material between the thumb nails. The slightest amount of grit can quickly be detected in this manner.

The relative economy of two pigments is simply ascertained

*These paragraphs form the concluding chapter of a late publication by the United States department of agriculture, of which a review appears on another page of this Journal.—THE EDITOR.

by a color comparison based on money equivalent weight. This weight is determined for any lot of samples under consideration by calculating how much of each is obtainable at some given price, generally the lowest quotation being selected as this price. The calculated amounts are carefully weighed on a sensitive scale. One weighing to grains is sufficiently accurate. Uniform amounts of white lead paste ground in oil are next weighed, one for each color sample, and placed at convenient distances apart on a sheet of glass. With an ordinary spatula or palette knife each money equivalent weight of color is thoroughly mixed with one of the portions of white lead. In this way a series of tinted leads will be obtained with color sufficiently diluted to show plainly the variations in strength of the original pigments. To express the differences quantitatively all the samples must be brought to the same tint by the addition of weighed amounts of lead to the stronger samples, and the percentage variation determined with reference to one sample as standard.

The following example will serve to illustrate the method of figuring an actual test: Two oxides of iron, *A* and *B*, are to be compared; *A* costs 6 cents per pound and *B* 8 cents. The money equivalent weights will therefore be for *A* 4 parts and for *B* 3 parts for the same money. Weigh out samples of *A* and *B* in these proportions—say 20 grains of *A* and 15 grains of *B*—and thoroughly mix each of these samples with one ounce of white lead paste. Supposing that sample *B* when so mixed is still strongly enough colored to require one ounce more of lead to match mixture *A*, it follows that *B* is 100 per cent. stronger on the basis of money equivalent weight. In other words, a pound of *B* at 8 cents will do as much coloring as two pounds of *A* costing 12 cents—or an actual saving in favor of the higher priced color by reducing the amount required. This illustration is a very moderate

instance of the actual differences in value observable in practice. In the case of blacks the variations are frequently enormous.

It should be noted that by preparing a color card from each sample tested, a permanent record of the colors may be obtained. Such cards, carefully marked with date and notes of the test, will prove a valuable help in maintaining the grade of goods desired. Every reputable color dealer will welcome comparisons of his goods based on "money equivalent weights" as explained above. The ease, accuracy, and profit with which these tests can be made should bring them to the favorable consideration of every factory superintendent.

A RUBBER FACTORY HOSPITAL.

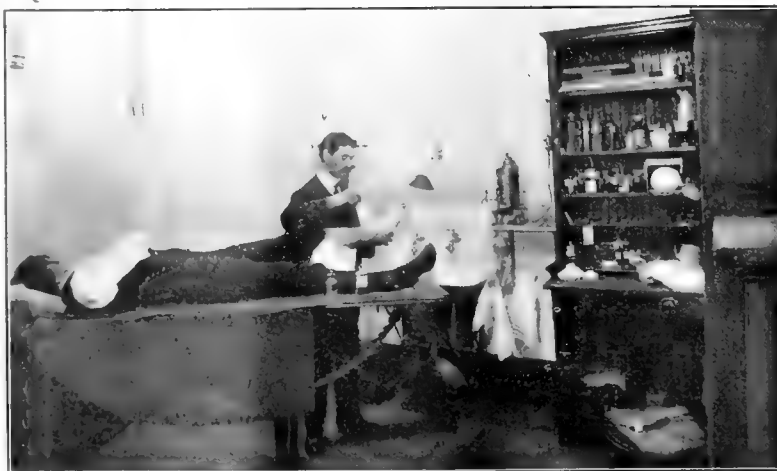
ALTHOUGH few very serious accidents occur in rubber factories, there are a great many minor ones, particularly where a large force is employed. The prompt treatment of such accidents not only obviates much suffering, but is a definite time and money saver. The illustration shows a corner of the emergency hospital that, started as an experiment,

is now a permanent part of the works of the Hood Rubber Co., at Watertown, Massachusetts. The hospital is equipped with everything in the way of instruments, bandages, lint, and antiseptics that the treatment of sprains, bruises, cuts, or fractures may demand. In addition, there is a good stock of the remedies usual to dispensary practice. The room, besides the usual electric lights, has two large arc lights, an electric water heater, a surgeon's operating table, and various minor appliances. A careful record of all cases treated is kept, the number for the first eight months of 1903 being 1778. Not only is the hospital useful in accident cases, but it has been found most valuable in determining and stamping out contagious diseases. For example, within a twelvemonth both diphtheria and German measles were detected. The cases were at once isolated and the diseases eradicated before having a chance to become epidemic. A competent physician is in charge of the hospital and the work he has done is much appreciated by both the company and their 2300 employes.

RUBBER NOTES FROM EUROPE.

THE TIRE SITUATION IN GERMANY.

A WRITER in the *Gummi-Zeitung* on the tire situation mentions that orders for bicycle tires generally are placed with the factories during the autumn months. Last autumn no one could have foreseen the advance which has taken place in the cost of crude rubber—amounting to 33½ per cent. at the time the article was written—and manufacturers in consequence have not found their business remunerative. Already the tire business yielded only small profits, since the decline in the prices of bicycles, due in part to overproduction, had imparted a certain depression to tire prices. In accepting orders for 1904 the rubber manu-



A RUBBER FACTORY HOSPITAL.

facturers will be forced to ask higher prices, not only because of the increased cost of rubber, but because of the advance in cotton fabrics as well. The *Gummi-Zeitung* writer counsels tire manufacturers not to permit the higher cost of materials to tempt them to lower their standards of quality. It would be desirable, he says, if manufacturers of bicycles should demand higher prices for their output, to correspond with the higher cost of rubber products, though he fails to point out what influence the rubber trade can have in this direction. But it is interesting to hear from bicycle manufacturers and dealers that their experience with cheap tires has been very unsatisfactory, which fact may be helpful to the tire manufacturers in their insistence upon maintaining the quality of tires.

GREAT BRITAIN.

GEORGE R. BROWN & Co., 3, Jewry street, Aldgate, E. C., London, have arranged to represent the Northern Rubber Co., of Retford, Notts, England, in the sale of their mechanical rubber goods in the London trade. Mr. Brown began his connection with the trade at an early age, in the employ of the North British Rubber Co., Limited.

THE RUBBER SUPPLY AND DEMAND.

ANY material decline in crude rubber prices must result from a wider margin than now exists between supply and demand. In other words, there must be (1) a check to the rubber industry, or (2) an increased production of the raw material. The first condition, of course, no one wishes to see, besides which no reason is apparent for predicting its occurrence in the near future. Then what is the outlook for more rubber?

An encouraging fact is that the production of Pará rubber has been steadily progressive from the beginning. The total exports from the Amazon river amounted in 1864 to only 7,840,000 pounds, and in the 38 years since only in eight cases has it happened that the output in any one year failed to show an increase over the preceding crop. In 1902 the figure was 62,809,500 pounds, and the trade in general looks for as much rubber this year. To take the last ten crop seasons (July to June) the rate of increase or decrease in the yearly arrivals at Pará has been as follows:

1893-94.....	+3.9 %	1898-99.....	+14. %
1894-95.....	-1.3 %	1899-00.....	+5.2 %
1895-96.....	+7.8 %	1900-01.....	+3.5 %
1896-97.....	+6.4 %	1901-02.....	+8.5 %
1897-98.....	-0.03 %	1902-03.....	-0.35 %

No study of statistics or conditions has yet revealed any law of increase or decline in production in this field, or a basis for prediction in any year. Two years ago an important Liverpool firm staked their reputation on a prediction that the next Pará crop would show a shortage of 20 per cent., and that the price would go to 4s. 6d. The crop actually showed a gain of 8½ per cent., and at the end of the season Pará rubber was selling at about 3s. The general attitude of merchants and traders on the Amazon is that of never expecting short crops, the reasons for which are well set forth on another page of this Journal by a Pará merchant of long experience.

Some criticism has been elicited by the article by Mr. Paul Cibot, reprinted in the last INDIA RUBBER WORLD from a French source, relative to the extinction of wild *Hevea* rubber, which he regards as an ultimate, though not imminent, certainty. Mr. Cibot has been a careful observer, for the last seven years, of rubber conditions on the rio Beni, and his views are entitled to respect, though the experience of the state of Pará would suggest that in Bolivia, as in the lower Amazon region, the collection of rubber will continue even after the period of the richest yield of the trees is past. Long as the rubber fields of Grão Pará have been worked, they now yield more rubber than ever before. The annual increase was rapid until, in 1893, the crop reached 8000 and some hundred tons, at which figure it remained for six years, the upriver output, from virgin fields, meanwhile increasing 25 per cent. Later the exports from Pará state have increased to over 10,000 tons, due probably to some extension of the area worked, as well as more judicious treatment of the trees. The Pará output is now being increased some by the discovery in that state of Cauchó, the receipts of which last season were 310 tons, against 85 tons the year before, and almost nothing previously.

A correspondent at Pará writes, bearing upon the continuous yield of old rubber estates: "Only a comparatively small percentage of the rubber trees on any estate are worked. There are always plenty of fresh trees near the *estradas*, and if the manager of the *seringal* is a man of enterprise (which is by no

means likely to be the case) he will search out and tap new trees as fast as the old ones die out, and this will keep up his quantity for an unlimited time. The life of a rubber tree which is tapped every season will not be more than 40 years, and when the work is not carefully or judiciously done, the tree will die out in less than half that time. For this reason it is plain to be seen that new rubber fields must be opened from time to time."

The Amazon exports include of course, the grades of rubber known as Cauchó, obtained from other trees than the *Hevea* species. From all accounts it appears that the collection of Cauchó involves the destruction of the tree, so that new fields must constantly be sought by the *caucheros*, for which reason a falling off in the supply has long been looked for. THE INDIA RUBBER WORLD (October 1, 1901) has published an exhaustive study of the rubber production of Colombia, which, after reaching a very large figure, has declined to almost nothing. That rubber is of the class marketed as Cauchó. The *caucheros* moved from Colombia to Ecuador and thence to Peru, everywhere exhausting the sources of supply. The trade in this rubber in Iquitos for awhile was very large, but it has now declined until business generally at that port is in a depressed condition. And yet Cauchó continues to come to market, because of new areas being opened to exploitation. The decline so long expected has not yet begun, unless it is to be seen in the fact that the export through Pará last year was smaller than in the preceding year; the totals for several years having been:

YEARS.	United States.	Europe.	Total.
1888.....	kilos 643,992	423,200	1,067,192
1892.....	930,225	735,067	1,665,292
1897.....	858,839	1,214,173	2,073,012
1901.....	1,325,290	2,035,599	3,963,889
1902.....	1,133,155	2,057,222	3,190,377

Certainly the limit of this large production must be reached in time, for the whole of the Cauchó producing district, just as has occurred already in Colombia, Ecuador, and an important portion of Peru, after which the reliance for uncultivated rubber in America must be the *Hevea* trees of the Amazon region—the only rubber species that, in the wild state, is not destroyed in the extraction of its product.

The falling off of the rubber output of every important field thus far worked in Africa has been referred to often in THE INDIA RUBBER WORLD, and though new fields are opened from time to time, the total output is smaller now than it was a few years ago. The statistical summaries supplied by Hecht, Levis & Kahn (Liverpool) indicate that the yearly receipts of rubber at the leading markets of the world have been distributed as follows:

SEASON.	Pará sorts.	Other sorts.	Total.
1898-99.....	tons 23,329	26,818	50,147
1899-00.....	24,422	26,655	51,077
1900-01.....	25,255	25,224	50,479
1901-02.....	27,171	22,888	50,059
1902-03.....	27,446	25,713	53,159

It would thus seem that the yearly receipts of Pará sorts have increased at a steady, though not regular rate, the figure being larger by 17.6 per cent. last year than for 1898-99. On the other hand, the highest figure for all other sorts combined was reached five years ago, since which time the yearly average of such receipts has been about 1700 tons less than for the season 1898-99.

There was a time when the world's consumption of rubber

was supplied almost wholly from Pará. Then the Indian and African sources were developed, until their production exceeded that of the Amazon regions. During five years past, however, according to the figures in the preceding table, the percentage of other than Pará grades in the combined receipts in the markets, has been as follows:

1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
53.4 %	52.1 %	50 %	45.7 %	48.3 %

To sum up: Pará grades again form the larger half of the world's supply. The rate of increase in the Pará output seems

likely to be less rapid in future, especially as that output comprises Caucho—a grade destined to practical extinction. Madagascar and Assam sorts are practically gone, as are several West African sorts, and even the Congo output grows less rather than larger. It is possible that some of the unworked districts may be opened more speedily than now seems likely, but it now appears entirely safe to regard the limit of the world's rubber production, as a whole, as more nearly reached than at any time in the past. This condition does not inspire any hope of lower prices, to say the least.

RUBBER PROSPECTS IN THE AMAZON COUNTRY.

BEING asked to favor THE INDIA RUBBER WORLD with his views on the future of the supply of Pará rubber, Mr. Rudolph A. Zietz, of Pará, who is at present in New York, expressed himself as follows:

"I do not believe, as far as human judgment can foresee, that the output of rubber of all species, from the territory drained by the Amazon river and its tributaries, will ever be permanently 'short.' On the contrary, I believe more in estimating an average yearly increase, though not at the same ratio as in the last 25 years, during which it has risen from about 7000 to 30,000 tons. It is likely that in some years the crop may show a small shortage, but it will be counterbalanced by a larger crop in the following years. This gradual and steady—but from now on slower—increase will be the natural consequence of the constant opening up of new regions, the extension of facilities for transportation, and improving sanitary conditions along the Amazon. The quicker and better means of communication are enabling people to protect themselves more against the climatic conditions, and to hurry away in case of sickness.

"In a good many of the rubber districts permanent settlements of rubber collectors have developed, and they are becoming acclimated and learning to brave the peculiar hardships of life there. The work of collecting rubber can be done with comparatively fewer people to-day than formerly. I do not believe that the supply of new rubber hunters by immigration will be larger than heretofore. It is claimed that the material available from the north Brazilian states, willing or able to endure the privations of life in rubber gathering, cannot be materially increased, and as to the Indians, the principal reliance in the remote districts, I do not think that additional forces worth speaking of can be obtained. However, this question of labor, in view of the sanitary and other improvements stated above, will not to any extent interfere with the natural increase of the annual output.

"I do not doubt that in the course of time enthusiastic prophets will arise, predicting all sorts of things about very large or small crops, to further their own speculative ideas and interests, and by doing so disturb the course of the consuming markets. I may for instance cite the prophecies for the crop year of 1901-02. Some people predicted a very small crop—as much as 20 per cent. shortage. These prophecies were plausibly based on the presumption that the severe financial crisis at that time existing in Pará and Manáos (a natural reaction following senseless overtrading and other commercial errors) would interfere with supplying the necessities of life to the rubber gatherers, to the extent that work in some districts would have to be abandoned. Well, it turned out that the 1901-02 crop surpassed the previous crop by about 8 per cent. Those prophets had not taken into consideration that a great

portion of none too honest rubber gatherers, who had been working under masters, apparently abandoned their territory without delivering to its owners the rubber they had gathered, but in some way the rubber found its way to market.

"The proper control of the labor at some interior points is an impossibility. Many of the poor ignorant gatherers cannot withstand the temptation of making what they consider a fortune in a short time, without paying any attention to the wrong they do to their masters, who advanced the necessities of life to them in good faith. Many *aviadores* (merchants who do the trading in the interior) who were largely indebted to the Pará and Manáos merchants were, in consequence of not getting the expected rubber, unable to meet their obligations, and thus assisted in causing the financial crisis. I feel convinced that all available rubber trees, worth tapping, were tapped, and will always be tapped.

"After the time, many years ago, when rubber ceased to be exported in the shape of shoes, the state of Pará was the first to inaugurate the collecting of rubber on a large scale and exporting it in its present shape. In the course of time Pará has been far surpassed in the quantity of output by the state of Amazonas and other upriver districts. Almost the whole state of Pará has now been explored, and consequently the output of rubber from this quarter will remain more or less stationary, though it may yet show a slight increase, independent of the fact that the year 1902 showed an exceptionally large output for Pará state. But the upriver districts will be the great factor in the gradual general increase of the output of rubber from the Amazons. In a good many districts in Pará the rubber trees have become exhausted and abandoned, but as the Almighty is the best friend of Brazil, I suppose that new trees will appear in time, and that the now abandoned districts may be reopened.

"When the whole rubber area of the upriver regions, undoubtedly containing many virgin districts, has been fully developed and explored, many trees will be abandoned or exhausted, just as is the case in the state of Pará. One hopeful feature is that people are endeavoring to take better care of the trees and give them a 'rest' now and then, and introduce better systems of rubber gathering. Whether rubber plantations will ever be successfully established or whether the Brazil's paternal government will try, in its own interest, through wise and practical advice, to stimulate the slumbering energy and good common sense of its obedient and docile, but intimidated subjects, is hard to say. The good people on the Amazon are too much accustomed to shutting their eyes and trusting in Providence.

"You might quote the opinion of a clever and patriotic Brazilian politician, expressed at Rio de Janeiro many years ago, of the character of his own countrymen:

Comquanto nós estejamos acordados o paiz atraze 2 passos, no nosso somno Deus, mesmo contra a nossa vontade, nós puxa para deante 3. [meaning in English: Whilst we are wide awake during the day, our country goes back two steps, but when asleep God pushes it against our own will three steps ahead.]

"Thus nature will push the rubber output of the gigantic, beautiful, and marvelously favored Amazonas, and if it fails in

one corner it will be made up in another, and with it the whole rubber business will go ahead in Brazil, giving to everybody concerned a chance to make money, or lose it. In any event, I am convinced that for many years to come Brazil will be able to furnish large quantities of rubber, unsurpassed in quality by the product of any other country and perhaps not approached by any."

A COMPARISON OF RUBBER PRICES.

THE diagram on this page, indicating the fluctuations in the price of Pará rubber for the past eighteen years, is based upon a record of the highest New York price month by month. It may possess a historical interest, showing as it does at a glance the course of the market during a longer period than most persons who will see this page have been concerned about the price of rubber. But any attempt to analyze the causes of the fluctuations here outlined, particularly with a view to propounding some law governing the market, is met by some very inconvenient obstacles.

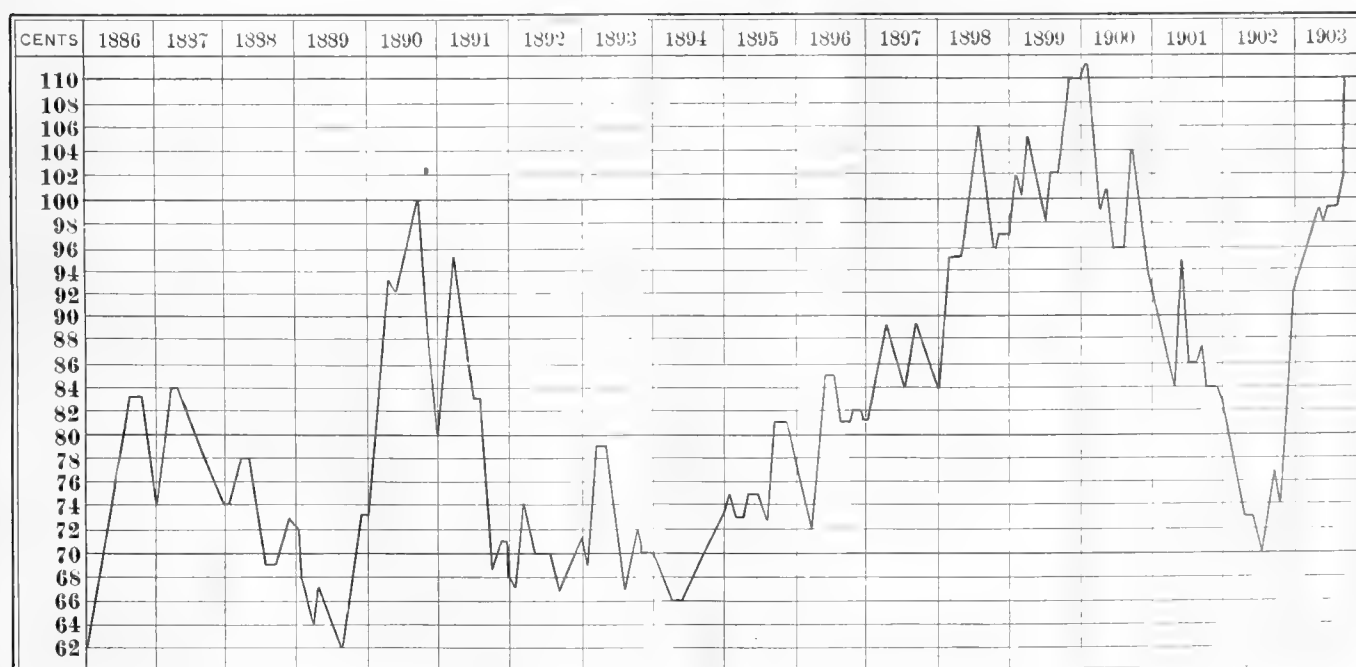
The size of stocks regulates prices less directly than might be supposed. Stocks of Pará rubber in the United States and Europe—not counting supplies at Pará and afloat—on December 31 of each year have averaged about 3,000,000 pounds. The smallest stocks for the end of any year were reported in 1895 (1,765,000 pounds), at which date the highest quotation for Pará sorts was only 78 cents. The largest stocks (5,000,000 pounds, at the end of 1901) were coincident with prices about 6 cents higher. The highest prices shown in the chart were reached at a time when stocks were considerably above the average. The lowest price, however (in 1889), belongs to a period of low stocks.

The rate of consumption—something not always easily estimated at the time—must also be taken into account. For the years of industrial depression in the United States, in the early '90s, the chart shows a low average of prices. The more recent decline was aided by the failure of a New York importing

house, which exposed an unsuspected surplus of rubber, and was coincident with depression in the industry in some European countries. No condition of stocks will lead to high prices when the buying demand is light. Yet, on the whole, the law of supply and demand does operate in regard to rubber the same as every other commodity, and the most recent advance is not surprising in view of the admitted short supplies in every market in the world.

The high prices of 1890-91 were attributed at the time to, speculative manipulation, managed during the latter part of the period by Vianna, of Pará, though his activity really was manifested too late for him to realize any profits. Every considerable advance, by the way, is charged by consumers to speculation, though evidence generally has been lacking that the world's supplies have been largely held by any one interest. Just now an English firm are widely reputed (in this country) to be pursuing a policy in raising rubber prices which their competitors have not strongly attempted to oppose. But English authorities, on the other hand, insist that the prevailing prices are not speculative, but due to the unusually small supplies, coupled with a heavy consuming demand and uncertainty as to the future.

The highest prices ever reached, however—\$1.20 in 1882—were due wholly to the first speculative movement engineered by Vianna at Para. He did have a virtual monopoly for awhile and controlled the market as has never been done since, but the period of extreme prices was very brief.



PARA RUBBER PRICES FOR EIGHTEEN YEARS (BASED ON HIGHEST NEW YORK PRICE IN EACH MONTH.)

RUBBER PLANTING INTERESTS.

PLANTING "PARA RUBBER" IN MEXICO.

TO THE EDITOR OF THE INDIA RUBBER WORLD: You will find from the enclosure that we are executing an order of 100,000 *Hevea Brasiliensis* seeds for Mexico.

Our seeds are guaranteed 75 per cent. to germinate. Besides this, we are executing a large number of orders from Sumatra, Guatemala, Cuba, Java, Fiji, and other parts of the world for both seeds and plants of *Hevea*. The highest award was given to Pará rubber prepared by a native from our Kola estate last week, at the Agri-Horticultural show held at the government tropical garden at Heneratgoda. Out of many varieties of rubber yielding trees and creepers cultivated in Ceylon up to the present time Pará rubber turned out as the most profitable and the best adapted variety in all respects, answering to soil, climate, etc., from the sea level up to elevations of 3000 feet and over and cultivation extending yearly. Yours faithfully,

J. P. WILLIAM & BROTHERS.

Heneratgoda, Ceylon, July 13, 1903.

[ENCLOSED in the above communication is a copy of a letter signed W. P. Pinkham, manager of the Plantacion Ubero, in the state of Oaxaca, Mexico, stating that this company had decided to plant 100 acres in *Hevea Brasiliensis* during this year. The letter mentioned that from planting 52 seeds of this species, somewhat old, six weeks prior to writing, the writer had fifteen good seedlings about 6 inches high. The letter was followed by a telegram to Messrs. William, dated July 8, ordering 100,000 seeds.]

* * *

THE Singapore *Agricultural Bulletin* (July, 1903) contains the following: "As Pará rubber seeds have the reputation of very quickly losing their vitality, the following extracts from a letter from Mr. J. C. Harvey of Vera Cruz, Mexico, will, no doubt, be read with interest:

You will perhaps be interested to know, that of the twenty seeds of *Hevea Brasiliensis* you so kindly sent me, I have now fourteen thrifty plants a foot high. I feel very proud of them. The matter is worthy of record, as undoubtedly they are the first plants ever raised in Mexico.

"These seeds were from the Pará rubber trees growing in the economic section of the botanic gardens. They left Singapore on February 12, 1903, and arrived in Mexico on May 3."

EXPORTS OF CULTIVATED RUBBER FROM CEYLON.

OUR record has now been brought up to August 17 last, to which date, since the beginning of the year, the official statement of exports of the product of Ceylon rubber plantations amounted to 26,413 pounds. The total output in 1902 was 21,168 pounds, and in 1901 only 7392 pounds. At the London auction on September 4, several packages of "Pará rubber" from Ceylon sold at 4s. 6¼d. to 4s. 8¼d., being equal to \$1.10 and \$1.13½ respectively. On the same date fine upriver Pará two years old sold only at 4s. 4d. [= \$1.05], the highest quotation for any grade of rubber from the Amazon.

BUENA VISTA PLANTATION CO.

[Plantation "Buena Vista," San Juan Evangelista, canton of Acayucan, Vera Cruz, Mexico. Office: Elkhart, Indiana—See THE INDIA RUBBER WORLD, March 1, 1903, page 193.]

AT the first annual meeting (Elkhart, August 20) Edgar J. Hahn, plantation manager, personally presented his report on the operations from October 20, 1902, when the company took charge of a partially developed estate, to July 1, 1903. During this time 2125 acres of new land had been cleared; 825 acres

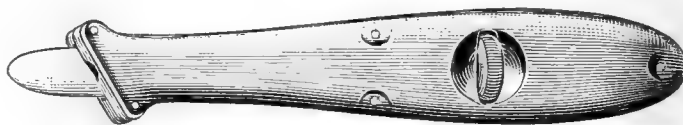
planted to rubber, 300 acres to sugar cane, and 500 acres made into pasture; additional accommodations erected for labor, the force since January 1 averaging over 500: carpenter and blacksmith shops, saw mill, and brick kiln erected; water supply, electric lights, and telephone service installed; and other improvements made. The 150 acres in sugar cane planted by the former owners yielded 7000 tons, which was ground on the plantation. The financial statement shows net profits (in Mexican currency)—

From operation of sawmill.....	\$ 3,519.08
From operation of plantation store.....	3,339.37
From proceeds of sugar cane crop.....	55,703.45
Total.....	\$62,561.90
Total, United States currency.....	27,703.83

A dividend was declared, payable September 1, equal to 14½ per cent. on the outstanding stock of the company. The number of \$100 shares sold had been 3392, amounting to \$339,200, but only so much of the capital ranks for dividend as has been paid in. R. P. Probasco retired as director, E. J. Hahn being elected instead. Milo D. Campbell, mayor of Coldwater, Michigan, was elected by the stockholders to inspect the plantation as their representative.

A NEW RUBBER TAPPING TOOL.

THE *machete*, or cutlass, unless in the hands of one very skilful in its use, is not an ideal tool with which to tap a rubber tree. All of the planters appreciate this, and many attempts have been made to invent something that shall be cheap, strong, simple, and practical. The illustration shows a tool of English



make that is now being tested on the rubber plantations in Mexico and in the East. The knife, which has its socket within the handle, can by a screw arrangement be quickly set to project beyond the guard any distance up to an inch and a half. The blade is of a good quality of steel, and the handle of gray cast iron strongly riveted. [Thomas Christy & Co., 25 Lime street, London.]

MEXICAN PLANTATION NOTES.

THE Vera Cruz Development Co. (Canton, Ohio), developing "La Esmeralda" plantation, in Vera Cruz, report the payment of a 4 per cent. dividend for the first six months of this year, in addition to 7 per cent. paid December 1, 1902, which was from the first year's production of "short crops."

=H. M. Moritz, *administrador* of the "Obispo" rubber plantation at Tuxtepec, under Maxwell Riddle, treasurer of the Obispo company, is a Scotchman by birth and ancestry, who, after an experience with fruit growing and cattle ranching in California, settled in Mexico, where he acquired a practical knowledge of Spanish and much facility in handling native labor before joining the "Obispo" forces.

=Mr. E. H. Switzer, secretary of the United Tropical Planters' Association of Mexico, is in the United States for a brief visit.

=The Tehuantepec Rubber Culture Co. have planted this season 630 acres to rubber seed, at stake, in addition to their large planting last year.

RUBBER HOSE AND COMPRESSED AIR WORK.

IT is said that the largest single contract ever let in the world for construction was the subway railroad system now nearing completion in New York city. It comprised the most comprehensive system of rapid transit ever devised. For present purposes it is unnecessary to refer to the details and magnitude of this work, but it is a matter of interest to know that a vast portion of the work has been achieved by the use of pneumatic machinery and that the contractor, Mr. John B. McDonald, has referred to compressed air as "an indispensable adjunct to the construction of the subway." It was found early in the experience of the contractors, that steam was unsatisfactory as a motive power from the fact that the many steam boilers each involved an expensive licensed engineer and further, that the losses by condensation greatly reduced the pressure and interfered with efficiency. Compressed air has however been made easily applicable by a few first class compressing plants and the liberal use of superior rubber hose. No work ever undertaken has more thoroughly demonstrated the advantages of pneumatic machinery and its ready application over extended areas.

The work upon the New York subway is merely cited as an illustration. Except for the use of pneumatic machinery the cost of that construction would have been vastly greater and the time necessary for its completion much longer. It is only one instance, however, of the application of such machinery. It is a recognized feature now of all construction where iron is the material handled. The clatter of the pneumatic riveting hammer is heard continuously upon every modern building during the construction of the steel frame and upon every steel bridge. In the shipyard and in the machine shop the pneumatic tool likewise has become indispensable.

The pneumatic punch which is now in general use, prepares the plates at beams for the rivets and hammer. This implement, in itself, is a revelation in iron working. The old method in use, where high power hydraulic or steam punches were utilized, required heavy machinery for conveying iron along underneath the punch. According to the weight of the beam or plate this was heavy labor, required considerable power and the services of a number of workmen. The pneumatic punch is a small implement, weighing sometimes not more than 28 pounds. It is easily swung from a crane, can be placed anywhere in any position and one man or boy can manipulate it. It works rapidly, and more accurately than a power punch because it can be exactly placed. One workman can accomplish many times the amount of work in a given time

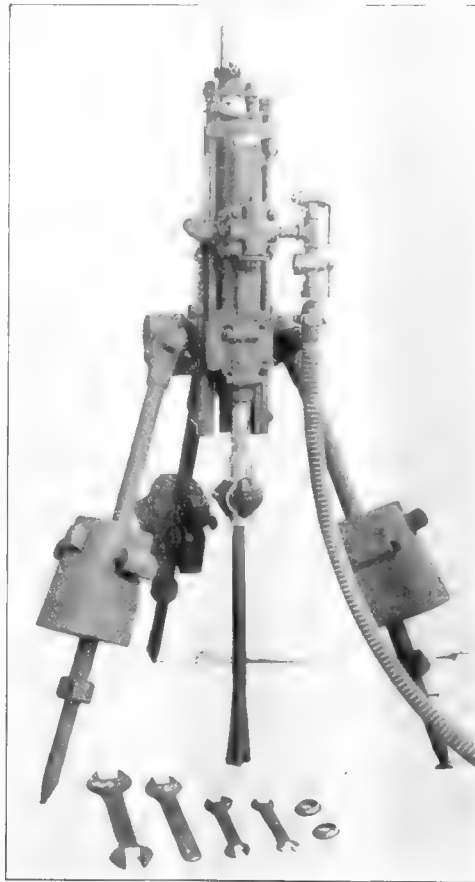
that under old methods required a gang of men. It can be taken up a smokestack or inside a boiler; for work on ship-board or upon tanks it is incomparable. The rubber hose will allow it to be placed anywhere that it is needed.

Even more important than the punch, however, is the riveting hammer. Its convenience and speed, and the superiority of its work, make one marvel how iron work was ever accomplished without it. It works with equal facility upon the top framework of a twenty story skyscraper and in the tunnel being driven under a river. The use of the substantial rubber hose makes it safe and reliable anywhere. The power can be generated at some point convenient to fuel and water but the work

is done just the same no matter how inconvenient the spot. For binding the plates of ships, for boilers, and for all work requiring closeness of joint it is incomparably superior. The secret of good workmanship in this character of employment is to head the rivet before it has time to cool. The contraction of the cooling process itself then binds tighter than any power has been able to do. Under the old system of the hand hammer the most expert workmen could not head the rivet in less than from twenty to thirty seconds and the rivet had cooled when the work was done. With the pneumatic hammer less than five seconds are sufficient and cooling process comes after the head is on, holding the surfaces together like a hydraulic press. One man does better work in five seconds than two formerly performed in thirty.

In heavy shipbuilding this convenience and celerity is of particular advantage. The increase in size of ships has rendered the plating so heavy that to draw it up in a satisfactory manner requires the use of a rivet too large to be properly driven by hand. By use of the pneumatic implement the operation is done quickly, before the rivet cools, resulting in drawing everything together firmly. The economy of the work is also a question of vital importance.

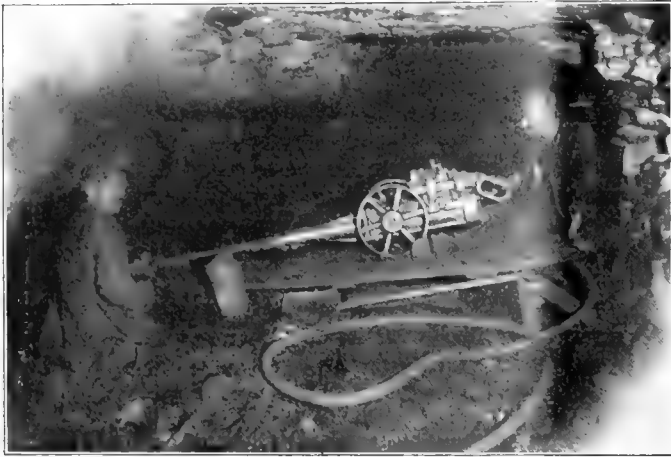
The statement is made that in building an ordinary lake steamship of 4000 tons, the saving in the riveting alone over hand work amounts to between \$4000 and \$5000. Other pneumatic tools secure equally beneficial results in shipyards. In all of the larger American establishments they are now in use for chipping, calking, beading, and drilling, and similar appliances are being introduced into shipyards abroad. The pneumatic hammer has found a field for itself wherever the service of a blow is necessary to labor—from the long stroke heavy implement that will in a few seconds head a $1\frac{1}{4}$ inch rivet, to the light hammer for delicate carving and engraving that weighs no more



AIR DRILL.



PNEUMATIC HAMMER



AIR DRILL WORK IN MINING.

[Showing its great adaptability to positions not easily accessible.]

than a pocket pistol. The pneumatic tool has revolutionized construction work from the digging for the foundation to the carving on the capstones of the finished structure. It has decreased the time necessary, greatly cheapened the cost, and immeasurably added to the efficiency of the work. Besides these merits must always be considered the incomparable merits of adaptability and convenience. The pneumatic tool can be placed anywhere, in any angle, at any height, at any depth. It must be apparent that this development, that this advancement in the art of construction is entirely dependent upon the use of rubber hose. It is the flexibility, the pliability, of the tool that is its most meritorious feature. The rubber hose attachment is indispensable to its value. A pneumatic hammer, or punch, or chipper, or drill with only a fixed and rigid attachment would be of little service. The expense in time and labor of moving and changing connections, or in conveying material to the tool would rob it of the greater part of its present superiority over hand work. The secret of its success is its hose attachment. As its uses spread, as new contrivances are devised to further utilize the power of compressed air the development of the rubber industry that is its indispensable adjunct must correspondingly expand. The volume of business for this purpose is increasing every year, and the use of pneumatic implements is perhaps as yet only in its infancy.

The character of rubber hose needed for use in pneumatic machinery is of the very best. It requires vastly more strength and the use of more rubber and a better quality than ordinary hose. The inner tube of the hose must be thick and perfect, the four ply of heavy duck well frictioned, and the cover strong and the whole well vulcanized. In addition, the cover is



PNEUMATIC TOOLS IN SHIPBUILDING.

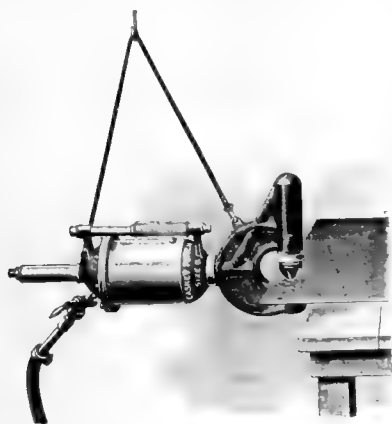
[Riveter at work on Side Framing.—Courtesy of the *Scientific American*]

generally protected by wire or other material to save wear and tear when being dragged about over rough surfaces. Among the most satisfactory hose in this service is that covered with woven marline or woven cotton protection. This is considerably more expensive than plain hose, but is more durable and therefore more economical in the end. Cheaper hose is in use which has a plain canvas covering and there are numerous grades of wire protected hose, including the loosely wire wound, the flat wire wound and a recent patent embracing a woven wire armor which entirely covers the exterior rubber. It is very rare that this character of hose bursts from pressure within, but unless it is adequately protected it not



VARIOUS APPLICATIONS OF PNEUMATIC TOOL WORK.

infrequently breaks through from exterior causes. The main cause of destruction however is from within. The pulsations of the air as the pressure is on and off the implement has an effect upon the vulcanized bond between the inner tube and the duck layers. The inner tube sooner or later—according to the quality of the manufacture—gradually loosens from the duck and when it once becomes loose is apt to fold upon itself and choke the hose. Such a condition is practically beyond remedy. This action of



A GOOD TYPE OF PNEUMATIC PUNCH.

compressed air upon hose is more destructive than the action of water, even when the latter is at a higher pressure.

The manufacture of pneumatic tools has attained very large proportions, being carried on, in the United States particularly, in a number of extensive plants. Recently the more important of these have been brought under the control of one large corporation—The Chicago Pneumatic Tool Co.—organized under the laws of New Jersey with \$7,500,000 capital. The president of this company is J. W. Duntley, who is one of three members of an executive committee, the other two being Charles M. Schwab, late president of the United States Steel Corporation, and C. H. Matthiesson, the president of the Corn Products Co., some further reference to which, by the way, appears on another page of this issue. Close relations exist between this combination and the Consolidated Pneumatic Tool Co., Limited, of London, on the board of which Mr. Duntley has a seat. These two important organizations control the greater part of the business of supplying pneumatic tools to the world. Great mining enterprises call for large outfits of pneumatic tools, and most of the shipyards now in operation have pneumatic equipment. In addition to these large enterprises, opportunities are offered in almost every form of industry, except those devoted to the production of goods by machinery, for the use of pneumatic tools in some form or other, all of which tends to maintain a very important demand for rubber hose which, a few years ago, did not exist.

"NOMENCLATURE OF RUBBER."

TO THE EDITOR OF THE INDIA RUBBER WORLD: In the September issue of your Journal your British correspondent refers to an address I delivered at the recent Congress for Applied Chemistry at Berlin. According to your correspondent I, in the above mentioned address, "indulged in a tirade" against the terms India-rubber, Gum, and Caoutchouc, describing them respectively as childish, ignorant, or barbarous, and he represents me as having proposed the term polyprene in their place generally. Your correspondent's notions regarding the meaning of the term "tirade" must considerably differ from the accepted meaning of this term, as my "tirade" was delivered in the form of an appeal to the workers in the chemical domain of the India-rubber field to agree upon a term for India-rubber lending itself to the purpose of rational chemical nomenclature. The words actually used by me, in as near as possible literal translation, are as follows:

Turning now to the chemical problems of India-rubber, I desire to

appeal to all co-workers on the question of nomenclature. We cannot seriously propose to introduce into chemical nomenclature the barbarous term of Caoutchouc. The childish English designation of India-rubber, or the ignorant German term of Gummi (gum) are not even thinkable in this relation. I myself have proposed and used the term of Polyprene which for the purpose in question appears permanently acceptable, all members of the India-rubber group being interpretable as polymers of isoprene, the constitution of which is known with absolute certainty, but I should be pleased to accept any better designation which might be proposed.

From this it will be seen that the term polyprene was proposed "for the purpose in question"—i.e., the purpose of chemical nomenclature. The hare-brained idea of this term having been suggested for every day use in manufacture and commerce is purely the product of your correspondent's imagination, and his facetious remarks anent this proposal can refer to himself only.

That the word Caoutchouc is "barbarous" is for everybody sufficiently demonstrated by its origin, and the childishness of the term India-rubber must strike everyone on considering the industry it is applied to. There is, however, no doubt that the term Gummi (gum) is the most objectionable of the three, as it classes the material in question together with the gums, or gum resins. If such erroneous classification, which is implied in that term, is not "ignorant" I should like to know what it is. The attempt of using any of the above terms as part of our chemical nomenclature simply leads to grotesque results.

Your correspondent, in his own way, is quite right that the want of a rational designation for India-rubber will not bar in the least the progress of the chemical investigation of this substance, but it will in time lead to a great deal of inconvenience and confusion in the matter of terminology. If your correspondent were aware of the herculean labor encountered, now some time ago, by the "Geneva Convention" in the attempt to purge and systematize chemical nomenclature, or if he could remember the confusing changes which became necessary with the expansion and development in recent years of the chemistry of the sugars, and of the so-called heterocyclical compounds—two very large and important classes—he might well come to the conclusion that he would with advantage have tempered his somewhat misplaced irony with a little wisdom.

I remain, Yours very truly,

CARL OTTO WEBER.

Manchester, England, September 14, 1903.

"ROOT RUBBER FROM NIGERIA."

MR. JOHN HOLT, of John Holt & Co. (Liverpool), Limited, writes to THE INDIA RUBBER WORLD: "I enclose a bit of bark taken from a root that has been sent me from the Niger. It is a vine growing about 8 feet high. The vine produces no latex, but as you will observe, there is plenty of rubber in the bark of the root. I have not yet been able to ascertain what scientific name this plant bears."

This note reminds us of the fact that the forestry regulations of Southern Nigeria prohibit the extraction of rubber from the roots of plants, but this step doubtless was taken in ignorance of the existence there of plants containing rubber only in the roots. There is no evidence, however, that any of the Niger rubber yet exported is the product of the plant mentioned by Mr. Holt.

The government plans extensive rubber planting in Southern Nigeria. The colonial report for 1901 (lately printed) mentions the creation of extensive rubber nurseries and the collection of 3,000,000 rubber seeds to take the place of the existing seedlings when transplanted.

"RUBBER FROM CORN OIL."

IT will be remembered by those who follow the newspapers, that some years ago the daily press chronicled the marvelous discovery that rubber could be manufactured from corn oil, and jumped to the conclusion that in a very short time the patient rubber tree would be put out of business. Rubber manufacturers, and indeed those who manufacture corn products, had not such visions, but understood that the new product was simply a rubber substitute. That this substitute would be produced in larger quantities than any other and be shipped in carload lots all over the world was not, however, forecasted by rubber manufacturers. Such now, however, is the case, the popularity of the material being due to its usefulness as a filler and insulator and its absolute harmlessness when widely used, besides which it has the advantage of low cost.

There is perhaps another reason for the remarkable success that this substitute has enjoyed, and that is the manner in which it has been made and marketed, and that leads up to a brief description of the company—the Corn Products Co.—one of whose minor products it is. This company is a huge corporation, which would perhaps by many be called a trust, with a capital of \$80,000,000 and operating a dozen plants, all of which are located in the corn belt of the United States. These plants manufacture glucose, sugar, starch, dextrine, syrup, glycerine, cattle feed, corn oil, and so on. One of their new products, which is now being widely introduced, is "Karo" syrup, which is likely soon to be known in every household. The company is under the personal management of Mr. C. H. Matthiessen, who is the president, and who was in reality the creator of it. He is notable for having up to date plans, and a great staff of capable assistants and chemists.

As was mentioned above, the Rubber Substitute is a by-product, but has been developed as if it were a single manufacture in the Corn Products Co., and it is all made at the Chicago plant; one grade only being supplied and the price to consumer being based on the market price of corn oil. When one remembers that but a few years ago a five barrel order for corn oil substitute was a large one, and learns that as developed by the company above named it is now sold in carload lots, the story of a very interesting development is told.

SO-CALLED "MANJAK" FROM TRINIDAD.

THE reference to "Manjak as a Substitute for Rubber" in the July issue of THE INDIA RUBBER WORLD was based upon a report by the commercial agent for Canada at Port of Spain, to the effect that large quantities of this material had been discovered in Trinidad, and that it was being shipped to the United States, where a use for it had been found in connection with India-rubber. Later this official made a further report in the same vein, besides which the British colonial report on Trinidad for 1901-02 mentions the discovery of "manjak in paying quantities" on that island.

Inquiry has disclosed the fact that considerable of the material referred to had been brought to New York by Messrs. Arkell & Douglass, shipping and commission merchants, at No. 11 Broadway, who informed THE INDIA RUBBER WORLD that good deliveries had been made to a certain local firm of dealers in shellac, varnishes, and the like, and that their understanding was that it was been sold for insulation work and also for a floor covering. THE INDIA RUBBER WORLD was denied any information by the latter firm, but there is reason to doubt that any important amount of the material has gone into use in connection with rubber or as a substitute for rubber. It now

appears that the Trinidad product is not even true manjak, the nature of which was referred to in our July issue. The following letter has been received from an expert in asphalt products:

TO THE EDITOR OF THE INDIA RUBBER WORLD: In reply to your letter of September 16, asking me in regard to the discovery of Manjak in the Island of Trinidad, I would say that, although I am familiar with the bituminous deposits of the island and generally have new materials brought to my attention when discovered, I have never seen anything that approaches Manjak in quality or characteristics which was found in Trinidad. Small veins of glance pitch have been discovered from time to time, but have not furnished a commercial supply. Of late a vein of Grahamite has been discovered near San Fernando, Trinidad, but this material is very far removed in its character from good Manjak, as can be seen from the data on an accompanying sheet. This Grahamite is inferior to Manjak for varnish purposes. It will certainly not yield a rubber substitute which has any value commensurate with its cost. The San Fernando material is that which is sold on the market as "Trinidad manjak." Very truly yours,

CLIFFORD RICHARDSON,
Director New York Testing Laboratory.

Long Island City, N. Y., September 17, 1903

RUBBER CEMENT IN SHOEMAKING.

THERE is an interesting history connected with the rubber cement industry which I collected from a young man who is now in the third generation of cement manufacturers. The first cement ever made for the shoe industry was manufactured by the late W. W. Hadley in 1850. The rubber at that time was prepared with ether and chloroform and turpentine. It was used for making "Compo" shoes by William Harris of Marblehead, Massachusetts. For a long time after McKay shoes were made it was considered too expensive an article to use, and shoemakers used what was called a channel wax.

This was used until the middle of the '60's, although the first cement made with naphtha was made by Jacob Hadley, of the firm of Hadley & Pierce, of New Bedford, Massachusetts, who by the way, were the first to produce naphtha from kerosene oil. The first cement put upon the market cost \$6 a gallon. The materials at that time were very expensive and the processes of making were crude and very slow; but Yankee ingenuity began to assert itself in this as in everything else.

New and improved methods were brought out, which brought the price down to \$4 a gallon. There it remained for some time, until competition has brought it down to a very low price, although there are many different varieties of rubber. Pará rubber is used mostly for making high grades of channel cement. - - - It is an easy matter to detect poor rubber cement. Cheap rubber is chemically composed of 87.5 parts carbon, 12.5 parts hydrogen. Place a bottle of this cement in the window exposed to the sun and in a few days it will go back to naphtha. Pará rubber acts differently. The naphtha will evaporate, leaving only pure Pará rubber.—*Shoe and Leather Reporter.*

FRENCH TALC AND RUBBER.—As far as the rubber business is concerned, the use of talc commonly and inaccurately known as soapstone as a support during vulcanization, is an old story. With the advent of dipped goods such as finger cots, gloves, etc., a new use has been born; the talc becomes a dry lubricant and a package of it goes with every pair of gloves accompanied by the request that it be liberally used. As a matter of fact the glove is most intractable without it.

THE Connecticut Asbestos and Mining Co. have been incorporated under the laws of Maine, with \$300,000 capital, to control what is said to be the only asbestos mine in Connecticut.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

IN the August number of THE INDIA RUBBER WORLD appears a communication entitled "Obscure Causes of Factory Fires" which invites a word of comment, because the author seems to have cast his net of suspicion rather too widely, and to have caught in it substances which are out of place therein. He says litharge, whiting, and lamp-black are all used in practically all rubber factories, and all of them are subject under wrong conditions to spontaneous combustion. Now it seems to me that this statement is calculated to cause unnecessary alarm in the factory, as far as litharge and whiting are concerned, because not only have I never heard of these bodies evincing a tendency to spontaneous combustion, but also because it is difficult on chemical grounds to understand how they could act in this way. It would have aided to completeness if the author had stated the particular wrong conditions under which these bodies become dangerous, but information on this interesting point is withheld. With regard to lampblack, the case is different, and the hand of warning is rightly extended. Lamp-black as used in rubber factories is of various origins and densities, and although it is difficult if not impossible for any one observer to speak precisely, I may say that in my own experience it is only the heavy variety prepared by the carbonization of cellulose in retorts that needs to be looked upon with suspicion. This variety unless carefully prepared with the view of preventing spontaneous combustion may easily give rise to this phenomenon, and it is always advisable to buy it in small casks and to store these in a place where an accident would not be likely to lead to a general conflagration. However, if carefully prepared it is safe enough, and it is a long time since I heard of any trouble in a rubber works from this source. The gas blacks so largely produced in America do not seem at all liable to spontaneous combustion to judge by British experience of them. The reference to the possibility of a bubble or flaw in a window pane acting as a burning glass is not at all superfluous, and I have every reason to suppose that a case in my experience where a cold curing machine was fired was brought about by this agency. With regard to insurance, the British firms make a strong distinction between the different portions of our large factories, those few rooms where bisulphide of carbon or naphtha is used being either not insured at all or only at a prohibitive rate, while the rest of the factory comes under lenient treatment. With regard to spontaneous combustion of coal used as fuel, it does not seem at all necessary to consider the question, it being very rare for stocks to be accumulated weekly as daily delivery being the rule.

IN an important paper on "Problems in the Fat Industry" (*Journal of the Society of Chemical Industry*, June, 1903) Dr.

DR. LEWKOWITSCH'S
REMARKS.

Lewkowitsch makes a brief reference to the rubber substitute industry. He says: "Oils vulcanized with sulphur have already acquired commercial application, on account of their cheapness, as witness the sad state in which we find our India-rubber tubing after very short use." This statement no doubt applies correctly to a good deal of the elastic black rubber tubing which used to be made of pure rubber, but as regards a good deal of the red and grey tubing used in chemical laboratories I think the defects are due to over compounding with mineral rather than to the use of substitutes. Another remark

of his, although not particularly original, is of sufficient importance to be reproduced verbatim: "Vulcanized fish oils have also been brought somewhat prominently into the market, and it must be a matter for regret that the working out of the processes for the preparation of such products as Volenite, Maponite, etc., have not been completed on a small scale before they were placed before the public, as non-success only serves to discredit further technical efforts." With regard to this paragraph, with which I cordially agree, it recurs to my mind that Dr. Lewkowitsch's name appeared on the prospectus of Volenite, though only in connection with a certificate as to the cost of treating the oil. I don't think he ever pronounced upon the capabilities of Volenite, a fact which no doubt contributes to his peace of mind at the present time, as no expert cares to be associated with vain prophecies.

THE recent patent of The Rubber Balloon Co. of America (Brooklyn, New York) for a seamless balloon is of interest. As stated in the specification, the ordinary method of manufacture as carried out in England by welding the seams together by hammers leads to a considerable loss during the inflation process. From a hygienic point of view the seamless process seems to me desirable, because of the deafening noise the workers—generally girls—are subjected to by the rapid work of the machine hammers. Possibly, as applied to balloons, the process is patentable, though the idea of the manufacture of seamless articles from rubber solution by applying the latter to a mold of the required shape is not at all new, it having been carried out in England at least fifteen years ago. Some firms were more successful than others, a quick-drying naphtha being an important desideratum. Of course it is one thing to patent a process and another to ensure its satisfactory competition with existing processes; those who still use the jointed sheet rubber process will therefore look with interest for the practical results of the Brooklyn firm. Whether it is because the business does not offer sufficient attractions financially or because the *rationale* is not well understood I am unable to say, but the manufacture of balloons is, I believe, still limited in Great Britain to two firms, and one of these does not manufacture the raw material itself. The home of this class of business is to be found in France, the rubber having for many years, at any rate, been supplied by the two large Manchester firms of Charles Macintosh & Co. and David Moseley's Sons.

A CONSIDERABLE change has come over this business in the last few years. Formerly it was all made in the rubber works and sent out in tins, but now owing to the larger retail demand among cyclists and electricians, and also to the increased cost of railway freight, the larger number of dealers make their own, buying the masticated rubber from the rubber works. This has brought about a change in the quality of the rubber used, though I am not prepared to say that the change is altogether for the worse. Competition has led practically to the exclusion of soft fine Pará, and a mixture of fine and Congo, and, indeed, in some cases, Congo alone, is used. For cyclists' use a solution containing 11 per cent. of rubber is usual and this can be made by dealers at about 6 pence per pound, and this put up in tubes is retailed at about 2 shillings per pound. The profit here is not so large as it might seem, because of the

RUBBER
BALLOONS

INDIA-RUBBER
SOLUTION.

labor involved in filling the collapsible tubes. For other purposes the solution is still supplied by the rubber works direct; for instance, in the case of the carriage department at Woolwich, where the solution has to stand severe tests and must contain not less than 18 per cent. of rubber. The fact that cyclists' solution is now so largely made from African rubber instead of from fine Pará has proved rather a blow to those who commenced making solution from certain kinds of unvulcanized waste of first quality. The solution from this source could compete all right with the Pará product, but not with Congo, considering the attendant expenses. With regard to the freight question, though now somewhat a matter of ancient history, it may be mentioned that the efforts of India-Rubber Manufacturers' Association to obtain ameliorations in the conditions of railway transit with respect to large and small quantities of solution were attended with success. The alterations have now been in force six months, and as far as I am aware nothing has happened to cause the railway companies to regret their action. It certainly seems as if there has been too pronounced a tendency with both railway companies and municipal authorities to look upon rubber solution with the same eye as they regard dynamite. No doubt the absence in recent times of any catastrophe has done a good deal to allay apprehension in the official mind, and we may expect a lessening rather than an increase of vexatious restrictions.

DESPITE the large scale on which the operations of the North Western Rubber Co., Limited (Liverpool) are carried, I do not find that any of the previously existing firms in that line in England have closed their doors. In fact from reports made to me I understand that their position has not been at all affected. One reason for this is no doubt that the amount of recovered rubber used at the present time is larger than it was and shows a tendency to increase. Another reason may perhaps be found in the fact of the rather high prices asked by the American firm, though in saying this I do not wish to insinuate that the prices do not closely approximate to the quality. The New York quotations for rubber scrap as given in THE INDIA RUBBER WORLD are interesting to dealers on this side, as in several instances they show a difference from what obtains here. With regard to the demand for rubber scrap the rubber works are buying more and more of it from their customers, these now expecting it as a matter of course. For some time now the demand for drab waste has been greater than the supply, while the conditions are reversed in the case of the black. It is somewhat unfortunate that there is a good deal of very good quality too, in the market, which though not black, does not quite pass muster for drab owing to a small amount of litharge having been used in the mixing. Considering the very poor quality of the material, it is somewhat surprising that old tennis balls obtain such good value as waste, but probably the limited supply of drab available accounts for this.

THE instrument known as Fletcher's flexible bellows comes up for criticism in the last report of the Inspector under the Alkali acts, and a word or two with regard to it may not be superfluous. The invention of Mr. A. E. Fletcher, late chief Inspector under the acts referred to, it has for many years served a useful purpose in enabling the various inspectors to take samples of chimney gases for test in a much shorter time than by any box aspirator. The form is accurately described as that of a concertina; into the details of its use I need not enter except to say that the absorbent chemical is introduced into the bellows and is shaken up with the aspirated gas. The standard capacity is $\frac{1}{8}$ of a cubic foot, and it is made by the Silvertown company, a royalty

being paid to Mr. Fletcher. At first the outside was protected by a coating of canvas attached to the rubber, but rubber alone of the best quality is now used. It is not surprising that, owing to the use of these bellows in chemical works, they sometimes show premature decay, which is not always easy to explain, but the users of them have found that they last longer when in regular use than if put away for some months. I do not propose to go deeply into the scientific matter which Mr. Linder discusses in the alkali report. The main result, and what does not cause me any surprise, is that he finds the inner surface of the rubber to be covered with a resinous body which acts like an acid. This is of course the ordinary product of the oxidation of rubber and it is easy to understand that its presence might interfere with test made for acidity in gases where alkaline absorbents are used. Some of the inspectors use aqueous hydrogen per oxide, which I understand does not damage the rubber, though an ethereal solution does so energetically. It may be contended that this subject, to which I have devoted some considerable space, is hardly of sufficient general interest, but at any rate it deals with an application of rubber, and one which is unfamiliar to more than one or two members of the trade.

ALTHOUGH only last month I referred to this topic in a pessimistic strain, it would appear from information derived from one of our most important firms that a demand has set in for good quality material, the increased amount of rubber now being used in this branch being assigned as one of the causes of the present high price of rubber, or rather as a reason why the price should not be expected to decline at the moment. That a revival has come about is further evident from what is to be seen in the streets and in the windows of the leading outfitters who a twelvemonth ago had ceased to exhibit the rubber coat. No doubt the very wet summer we have had has caused a return of allegiance to an old friend.

FOR the future this company will be known under the extended title of the Irwell and Eastern Rubber Co., Limited.

THE IRWELL RUBBER CO. The latter concern was founded some years ago by the Messrs. Colsall in East London and has an important metropolitan connection. I have previously referred to the extensions in progress at the works of the Irwell company, and am informed by the directorate that these are almost completed and that the past delays in executing orders consequent on insufficient premises will now be obviated. If it is permissible to comment on the extensions taking place at this and one or two other works, one is forced to the conclusion that the personality of the guiding spirit is a more valuable asset than what usually figures under this heading in an accountant's certificate.

THE practical monopoly so long held by Messrs. Ayres in the supply of balls for tournaments and clubs has been seriously assailed this season and last by Messrs. Slazenger, whose balls have been adopted by the committees of the leading tournaments. Neither of these firms make the ball themselves, merely doing the covering. As far as ordinary club use goes, Slazenger's are in favor because they clean well, whereas Ayres' are reported as not cleaning at all well. This is an important point in the case of town clubs, where the balls get dirty very rapidly. At the same time those who favor Slazenger's because of this attribute, admit that Ayres' ball has rather more life about it than the other, which appears to be of a heavier build. As far as the washing is concerned, the difference in behavior can only be attributed to the quality of the material used in the textile covering.

THE
MACINTOSH
TRADE.

WASTE
RUBBER.

INDIA-RUBBER
BELLOW.

LAWN TENNIS
BALLS.

"FIELD DAY" OF THE APSLEY RUBBER CO.

THOSE who have followed the career of the Hon. Lewis D. Apsley will recollect that while a member of the Fifty-third Congress and a prominent member of the House committee on labor, he was one of those who were active in making the first Monday in September in each year a national holiday. It was, therefore, very fitting that, on September 8 last, when the Apsley Rubber Co. were congratulating themselves on the completion of another large addition to their rubber shoe plant, at Hudson, Massachusetts, the day should be specially observed at that place. It was done by planning what was very happily called Field Day, followed in the evening by a banquet and ball. No man in the rubber trade knows better how to plan such an affair than Mr. Apsley, and in this instance his decided faculty for organization was apparent. Committees were chosen from the foremen and leading employés of the factory, so that the long and interesting program of sports and entertainment was carried out perfectly, without delay or friction.

The sports began at 10 o'clock in the morning, with a bowling contest open for both ladies and gentlemen. This was followed by a very hotly contested polo game in the Hudson armory, and that in turn by two basket ball games—the first between the employés of the cutting room and the making room, and the second between the junior arctic makers and the junior stock carriers. At 1 o'clock the officers of the company, the employés, and the invited guests assembled in the public square, and, led by the Concord brass band, marched to Riverside Park. A few of the guests rode, but the officers of the company, headed by Mr. Apsley, marched with the procession, each carrying a special flag furnished by the committee on decoration. The entertainment at the park consisted primarily of a base ball game between teams from the clothing and last and the boot and shoe departments. The former elected to call themselves the "Has Beens" and the latter the "Cranks." The score was 11 to 9 in favor of the Has Beens. Other sports which were enthusiastically applauded were the hundred-yard dash, the fat men's race, one mile bicycle race, the ladies' bicycle race, two mile bicycle race, ladies' foot race (50 yards), broad jump, and hop, step and jump. For all of these suitable prizes were awarded.

Not only were all of the employés of the Apsley Rubber Co. present at the park, but a host of townsmen and invited guests joined in celebrating Apsley Field Day, to which the usually quiet town of Hudson

seemed to have wholly devoted itself with enthusiasm. Not forgetting the very normal hunger and thirst that such a gathering engenders, Mr. Apsley had purchased all of the bananas, peanuts, and popcorn that the town afforded, and, arranging a temporary bar under the grand stand at the park, had a half dozen active young chaps dispensing pink lemonade to all who were athirst.

At 6.30 in the evening the company gathered in the new rubber factory building, which had been handsomely decorated and arranged for the convenience of all.

On the first floor was a gentlemen's reception room and on the second floor a reception room for ladies. The third floor

was reserved as a ball room, and the fourth for a variety of indoor games. The fifth was filled with tables for the banquet, seats being arranged for some 600 guests, while the sixth floor was utilized as a smoking and card room.

The banquet, as might have been expected, was first class in every detail. At its close Mr. Apsley arose and said:

EMPLOYÉS, LADIES, AND GENTLEMEN: Let me extend to you the best wishes of the Apsley Rubber Co. and assure you it is a very great pleasure to have you here under these environments. We are thankful for the beautiful day, as it has made it possible for a lot of fun and pleasure. The friendly games we have engaged in have been fully

enjoyed by one and all, and they have brought to our notice some athletic wonders, but I fear, as president of the company, I made a slight mistake in affording so great an opportunity to Miss Lynch, Mrs. Blackler, Mrs. Murphy, Messrs. Perkins, Walsh, Wascott, Peters, Greenache, Riley, Hickey, Enos, Galvin, Kuhlthau, and Mahoney to show their skill and ability as athletes. They are wizards; but let us hope that neither the reputation they have made nor the prizes they have received will cause them to desert their old occupation and say "Good-bye" to us.

I will not detain you from the other pleasures that have been provided for you with any lengthy speech. I certainly hope that the evening's pleasures will be equally enjoyed by one and all. I must, however, congratulate you, employés, also the town of Hudson, on the completion of this second large addition to the rubber boot and shoe plant within two years, which now gives us the capacity to make from 12,000 to 15,000 pairs of shoes per day. This increase ranks our plant as one of the large manufacturing establishments of the country. The phenomenal success and growth in so short a time is marvelous.

I can only attribute this success and development to two things, namely: First, the management of this company, as you employés know, has had the liberality and courage to use the best rubber and plenty of it in the manufacture



PROCESSION OF EMPLOYÉS THROUGH WOOD SQUARE.



MR. APSLEY AS BASEBALL UMPIRE.

of their boots and shoes, and you know they have not cheapened their compounds as the price of rubber advanced.

Secondly, but by no means second in importance, is the fact that you, our employés, have put the work into the making of the shoes. Your faithfulness and intelligence have gone into the work, and as a result of these two all important factors, our goods have given splendid service, which accounts for our ability to increase the business and thus give you

the steady employment you have had. So, let us resolve to continue in the same wise course, the Company on their part keeping up the quality, and You keeping up your interest, and if possible put an extra roll in when making the goods, knowing that it means success to this business and permanent work for you, and in a short time we will outgrow this addition and will be wanting more room.

As stated in the beginning, you, one and all, have our best wishes.

After the applause that followed his remarks, Mr. Milton T.



PRESENTATION BANNER.
(With Portrait of Mr. Apsley.)

Bailey arose and, on behalf of the employés, addressed President Apsley, recalling the unusually kind consideration which the Apsley Rubber Co. had always shown to its employés, and saying how much the latter had appreciated the same. He recalled that, fourteen years ago, when the completion of the mackintosh factory building was celebrated by a banquet and ball, he had the pleasure of expressing to Mr. Apsley on behalf of the employés their sentiments of respect and regard for their employer, at which time they placed a clock in the office, the faithful ticking of which might be a constant reminder of the pleasant relations then existing. He had now, on behalf of a larger force, the honor to ask Mr. Apsley's acceptance of a banner now to be unfurled.

At the close of the speech, at a signal, a magnificent banner was unveiled, upon which appeared a portrait of the founder of the company. Although taken completely by surprise, and much touched, Mr. Apsley accepted it, responding in a few well chosen words. At the close of the banquet those who desired

to dance did so, while others took part in the great variety of games that had been provided for. The festivities of the evening were kept up until a late hour—to allow for which the factory was not to open until a late hour the next morning—and all present were enthusiastic in their appreciation of the day's unalloyed pleasure. Mr. Apsley remained until the end of the program, but Mrs. Apsley, who had been present at the banquet and the dancing, with a party of friends, left a little earlier.

In handling all the details of the exercises day and evening, there were some twenty committees employed, the moving and active head being Mr. Apsley, his efforts being most intelligently seconded by Messrs. William B. Loughton, H. C. Wagner, and Milton T. Bailey. All of the local newspapers were represented among the guests as well as Boston papers. There were also present: E. S. Giles, of the *Chicago Shoe Trade Journal*; George E. B. Putnam, *Boot and Shoe Recorder*, Boston; Wendell Gammons, *Shoe Retailer*; and the Editor of THE INDIA RUBBER WORLD.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of July, 1903, and for the first seven months of the calendar year, for four years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
July, 1903.....	\$ 66,821	\$ 78,329	\$ 213,591	\$ 358,741
January-June.....	407,863	263,463	1,246,363	1,917,689
Total, 1903.....	\$174,684	\$341,792	\$1,459,954	\$2,276,430
Total, 1902.....	386,105	355,092	1,116,558	1,857,755
Total, 1901.....	351,649	291,356	1,073,822	1,716,827
Total, 1900.....	317,726	251,525	861,627	1,430,878

SEVEN MONTHS FOR LAST TWO YEARS COMPARED.

Gain in belting, packing, and hose.....	\$ 88,579
Gain in "All other rubber".....	343,396
Loss in boots and shoes.....	13,300
Net gain in 1903.....	\$418,675

CANADA.

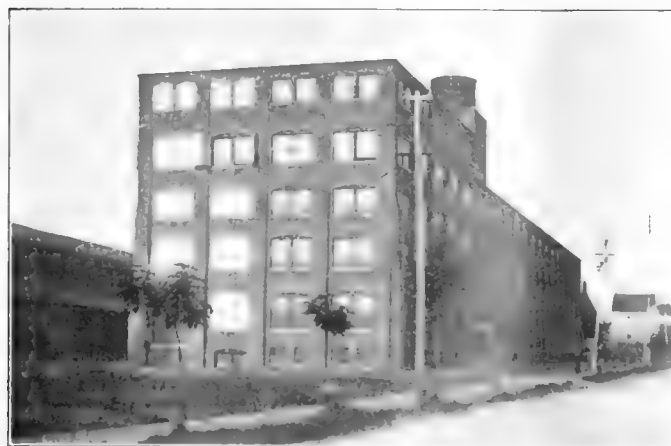
OFFICIAL statement of values of dutiable imports of manufactures of India-rubber and Gutta-percha for three fiscal years [July 1 to June 30]:

FROM—	1900-01.	1901-02.	1902-03.
Great Britain.....	\$155,384	\$217,477	\$393,321
United States....	432,649	521,963	571,687
Other countries.....	21,858	31,986	25,054
Total.....	\$609,891	\$771,426	\$990,062

The value of imports of crude India-rubber and Gutta-percha reclaimed rubber, and rubber substitutes, is given at \$1,986,913 for 1900 01; at \$1,656,275 for 1901-02; and \$1,824,705 for 1902 03.

Imports of Waterproof Clothing for the last fiscal year amounted in value: From Great Britain, \$357,130; from the United States, \$54,386; from other countries, \$86; total, \$411,602. Imports of Mackintosh Cloth amounted to 465,380 yards, of the value of \$92,285.

So much has been said regarding the heavy cost of automobile tires, said to be equal to 4 or 5 cents per mile, that it is most satisfactory to hear from Charles J. Glidden, the first automobilist to cross the Arctic circle, who in writing lately from Kommis, Sweden, gives his total mileage as 3596, with one puncture only, and no expense for repairs at all.



THE APSLEY RUBBER SHOE FACTORY.
The new six-story addition in the foreground.]

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED AUGUST 4, 1903.

- N**O. 735,065. Exercising machine [with elastic tension members]. W. H. Chellis and F. W. McAnanny, Racine, Wisconsin.
- 735,255. Detachable tire. H. E. Irwin, Galesburg, assignor to Irwin Rubber Co., Chicago, Illinois.
- 735,322. Horseshoe. H. Walker, P. S. Walker, and J. Hamer, Charlton, England.
- 735,329. Vehicle wheel [with resilient tire]. R. O. Wilcox, Wichita, Kansas.
- 735,373. Vehicle tire. C. L. Henderson, Berlin, Canada.
- 735,401. Hose coupling. J. R. McFall St. Louis, Missouri.
- 735,404. Nozzle and nozzle device for fire hose. E. S. Osborne, assignor to said Osborne and J. N. Martin, trustees, Chicago, Illinois.
- 735,622. Cushion tire. J. H. Toole, Chicago, Illinois.

Trade Mark.

- 4,880. Fountain bath brushes. The Allen Manufacturing Co., Toledo, Ohio. Used since November, 1902.

ISSUED AUGUST 11, 1903.

- 735,799. Hose handler and clamp. T. McGill, Paterson, New Jersey.
- 735,876. Hot water bottle [having side walls united at intervals by eyelets, consisting of short lengths of tube made of the same material as the body of the bag]. J. Holland, assignor to Goodyear Tire and Rubber Co., both of Akron, Ohio.
- 735,883. Cushioned base for receptacle [as bottle holders]. F. Keil, New York, and H. F. Keil, Bronxville, N. Y.
- 735,913. Weather strip. W. A. Scott, Evansville, Indiana.
- 735,989. Hose clamp. F. T. Lippincott, Newark, Ohio.
- 735,993. Sectional cushion tire. C. Miller, Binghamton, New York.
- 736,057. Hose and pipe coupling. A. Beatty, Pittsburgh, Pennsylvania.
- 736,072. Arm rest for crutches [with cushion formed of an inflatable tube]. H. S. Cole, Newtonville, Ohio.
- 736,082. Attachment for rubber shoes [a flexible rib on the sole]. W. Foreman and G. R. Conger, Taylorstown, Pennsylvania.
- 736,089. Portable bathing apparatus. Lida V. Gray, Tarboro, North Carolina.
- 736,108. Hose coupling. G. P. Jones, Penticton, Canada, assignor of one half to M. K. Rodgers, Seattle, Washington.
- 736,111. Inhaling apparatus. T. Kautz, Bad Reichenhall, Germany.
- 736,184. Hose coupling. J. Whiteford, Pittsburgh, Pennsylvania.
- 736,229. Method of making hollow balls. Cleland Davis, U.S.N., assignor to Cambridge Manufacturing Co., a corporation of Delaware.
- 736,230. Golf ball. *Same.*
- 736,231. Golf ball. *Same.*
- 736,323. Golf ball. *Same.*
- 736,233. Golf ball. *Same.*
- 736,239. Device for smoothing rubber tires. A. E. Ellinwood, assignor to Goodyear Tire and Rubber Co., both of Akron, Ohio.

ISSUED AUGUST 18, 1903.

- 736,394. Rubber heel. F. M. Hilton, J. S. Hilton, and W. W. Hilton, assignors of one half to C. R. Grant, all of Akron, Ohio.
- 736,414. Pneumatic tire. W. P. Litchfield, Akron, Ohio.
- 736,584. Pneumatic tire. W. Corliss, Providence, Rhode Island.
- 736,638. Tire [for bicycles]. W. P. Scofield, assignor of one half to R. R. Livingston, both of Gainesville, Florida.
- 736,677. Resistance tube [lined with insulating material]. C. Bloom, Brooklyn, New York.
- 736,683. Anti-skidding device for vehicle wheels. S. Butler, Westbury-on-Trym, England.
- 736,710. Fountain pen. W. I. Ferris, Stamford, Connecticut, assignor to L. E. Waterman Co., New York city.
- 736,908. Hose coupling. C. Wright, assignor of one half to J. J. O'Shea both of Everson, Pennsylvania.

ISSUED AUGUST 25, 1903.

- 737,021. Submarine cable laying device. B. Roberts, Mobile, Alabama.
- 37,031. Golf ball. W. M. Short, Beckenham, England.

- 737,070. Eraser tip for lead pencils. W. H. Brownell, Battle Creek, Michigan.
- 737,205. Tire [solid, for vehicles]. E. B. Cadwell, New York city.
- 737,257. Hose coupling. H. Crump and L. Metz, Frank, Pennsylvania.
- 737,364. Dress shield holder. T. Davis, New York city, assignor to Canfield Rubber Co.
- 737,509. Bicycle tire cleaner. F. J. Smith, Springfield, Missouri.
- 737,559. Tire. C. Miller, Binghamton, New York.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD offices at 10 cents each, postpaid.]

THE BRITISH PATENT RECORD.

[* Denotes Applications from the United States.]

APPLICATIONS—1903.

- 14,914. A. E. Terry, Birmingham. Repair device for pneumatic tires. July 6.
- *14,947. H. J. Doughty, London. Vulcanizing, molding, and finishing of rubber boots and shoes. July 6.
- *14,948. H. J. Doughty, London. Apparatus for vulcanizing, molding, and finishing rubber boots and shoes. July 6.
- 15,052. R. Taaffe, Liverpool. Pneumatic tire. July 7.
- 15,172. L. Frankenstein and C. Lyst, Manchester. Golf ball. July 9.
- 15,202. A. G. Grossmann and G. K. Wollaston, London. Prevention of side slipping of pneumatic tired vehicles. July 9.
- 15,225. R. A. Harris, London. Pneumatic tire. July 9.
- 15,242. R. Wallwork and C. H. Wallwork, Manchester. Vulcanization of tire covers. July 10.
- 15,353. C. Grayson, Liverpool. Slip preventing cover for pneumatic tires. July 11.
- 15,371. P. Frankenstein & Sons, Limited, and I. Sugar, Manchester. Waterproof garments. July 11.
- 15,374. R. Wallwork and C. H. Wallwork, Manchester. Apparatus for vulcanizing tires. July 11.
- 15,427. J. Hamblet, Birmingham. Pneumatic tire. July 13.
- 15,428. J. E. Layton, London. Golf ball. July 13.
- *15,474. A. J. Boulton, London. Golosh or overshoe (N. P. Bowler, United States). July 13.
- 15,522. M. Stanley, Birmingham. Rims and tires for motor car wheels. July 14.
- 15,641. H. L. Galloway, Glasgow. Golf ball. July 15.
- 15,804. F. F. Warburton, Manchester. Pneumatic tire. July 17.
- 10,819. W. J. Barnes, Reading. Chain and link insertion for pneumatic tire covers. July 17.
- 15,832. John Hancock Nunn, London. Improvement in the manufacture of golf balls. July 17.
- 15,913. T. T. Vernon, Liverpool. Pneumatic tire. July 18.
- 15,965. A. Dales, Manchester. Horseshoe pad. July 20.
- 16,015. B. Higgs, London. Inner tube for tires. July 20.
- 16,104. I. Clifford, London. Protected pneumatic tire. July 21.
- 16,110. T. C. Crawford, London. Golf ball. July 21.
- *16,128. W. P. Thompson, Liverpool. Golf ball. (J. B. Marston, United States.) July 21.
- 16,143. J. B. Scammell and E. A. Muskett, London. Gutta-percha substitute. July 22.
- 16,160. J. Butler, Manchester. Pneumatic tire and wheel rim for motor vehicles. July 22.
- 16,234. J. McLelland, Glasgow. Pneumatic tire. July 23.
- 16,289. A. Niven, London. Protection for pneumatic and cushion tire. July 23.
- 16,338. W. M. Short, Beckenham. Golf ball. July 24.
- 16,417. E. F. Maitland, Rye, Sussex. Golf ball. July 25.
- *16,567. Raymond B. Price, London. Vehicle tire. July 28.
- *15,576. Raymond B. Price, London. Apparatus for mounting rubber vehicle tires. July 28.
- 16,630. W. Barratt, Manchester. Pneumatic tire. July 29.
- 16,800. C. A. F. Gregson, Birmingham. Golf ball. July 31.
- 16,861. J. A. Davies, Taffs Well, near Cardiff. Inflated rubber sole for boots and shoes. Aug. 1.
- 16,903. G. C. Marks, London. Self sealing composition for pneumatic tire. (R. Gayet, France.) Aug. 1.
- 16,958. J. Anderson, Dundee. Apparatus for testing elasticity of golf balls. Aug. 4.

- 16,982. P. M. Justice, London. Golf ball. Aug. 4.
 17,042. B. McGarry, London. Non-skidding appliance for pneumatic tires. Aug. 5.
 17,080. A. H. Bancroft, Church, near Accrington. Band fastener for pneumatic tires. Aug. 6.
 17,098. L. Azulay, Southwick. Inflated tire. Aug. 6.
 17,156. I. Frankenburg, Limited, R. J. Frankenburg, Jr., and F. H. Betteridge, Manchester. Rubber solution or compound. Aug. 7.
 17,160. E. D. Killen, Belfast. Pneumatic tire. Aug. 7.
 17,176. J. A. Mays, London. Device for the protection of elastic tires. Aug. 7.
 17,187. S. S. Bromhead, London. Leak-stopping hose clip or bandage. Aug. 7.
 17,274. J. H. Patterson, London. Puncture-preventing device for pneumatic tires. Aug. 8.
 17,293. G. Pearson, Nottingham. Surgical syringe. Aug. 10.
 *17,318. S. E. Page, London. Playing ball. (The I. B. Kleinert Rubber Co., New York.) Aug. 10.
 17,461. G. Schumacher, London. Pneumatic tire for vehicles. Aug. 12.
 17,465. H. E. Irwin, Kingston-on-Thames. Pneumatic tire. Aug. 12.
 17,590. H. Hawthorne and the Imperial Tire and Rubber Co., Limited, London. Repair patch for tire covers. Aug. 19.
 17,604. A. Lebert, Düsseldorf, Germany. Pneumatic tire. Aug. 14.
 17,730. C. Lee, Birmingham. Pneumatic tire. Aug. 17.
 17,735. C. W. Formby, Weybridge. Pneumatic tire. Aug. 17.
 17,813. B. G. Mészáros and G. Weber, London. Toy balloon. Aug. 17.
 17,830. P. M. Matthew, Victoria India Rubber Mills, Edinburgh. Heel pad. Aug. 18.
 17,878. C. A. Houfe, London. Resilient wheel. Aug. 18.
 17,887. J. Russell, London. Pneumatic tire for vehicles. Aug. 18.
 17,945. H. J. Dixon and E. B. Brewer, London. Rubber tire. Aug. 19.
 18,009. J. A. Mays, London. Improvements in elastic tires and tire fabrics. Aug. 20.
 18,019. G. Dexter and G. H. Dexter, London. Pneumatic tire for vehicles. Aug. 20.
 *18,024. G. Barker, Birmingham. Improvements relating to pneumatic tires. (Lincoln C. Cummings, United States.) Aug. 20.
 18,028. A. E. Moore and A. Darch, London. Waterproof garment. Aug. 20.
 18,073. W. H. Freeman, London. Hose reel. Aug. 21.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 15, 1903.]

- *6,933 (1902). Pneumatic mechanical toy. G. T. Hyde, London. (E. S. Savage, No. 30 West Eighteenth street, New York.)
 7,061 (1902). Pneumatic tire. Self Sealing Air Chamber Co., Limited, and A. Franklin, Birmingham.
 *7,178 (1902). Vaginal syringe. A. R. Borden, Toledo, Ohio.
 *7,286 (1902). Wheel with protected elastic tire. W. F. Masters, Brooklyn, New York.
 *7,604 (1902). Bicycle pump [formed in part by some number of the bicycle frame]. J. P. Browning, R. H. Reville, and W. F. Pater-son, Brantford, Ontario.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 22, 1903.]

- 7,641 (1902). Pneumatic tire. L. A. Squire, Colchester.
 *7,746 (1902). Vehicle tire. C. Stein, Meadville, Pennsylvania. [Being the Stein double cushion tire, manufactured at Akron, Ohio.]
 7,798 (1902). Pneumatic tire. J. Butler, Altrincham; W. Bell, Knutsford; W. A. Jones, and J. Bate, Manchester.
 *7,935 (1902). Playing ball. E. Kempshall, Boston, United States.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 29, 1903.]

- 8,205 (1902). Pneumatic tire [provided with a chrome leather protector between the air tube and cover]. T. Houben, Liège, Belgium.
 8,018 (1902). Hose [comprising layers of rubber and asbestos impregnated with rubber, for railway and other like use]. Alfred Calmon, Hamburg, Germany.
 8,084 (1902). Utilization of India-rubber and Gutta-percha waste [by dissolving in phenol and later distilling the phenol from the mixture]. P. H. J. Chautard and H. Kessler, Paris, France.
 *8,161 (1902). Horseshoe. J. Riley, New York, United States.
 8,262 (1902). Means of closing leaks in hose. H. Fischer, Harburg a/d Elbe, Germany.
 8,224 (1902). Machine for proofing fabrics. J. Ingleby, Headingley, Leeds.

[ABSTRACTED IN THE OFFICIAL JOURNAL, AUGUST 6, 1903.]

- *8,406 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *8,407 (1902). Playing ball. F. H. Richards, Hartford, Connecticut.
 *8,408 (1902). Playing ball. *Same*.
 *8,409 (1902). Playing ball. E. Kempshall, Boston, Massachusetts.
 *8,410 (1902). Golf ball. F. H. Richards, Hartford, Connecticut.
 8,506 (1902). Cellular rubber tire for vehicles. A. Ducasle, Asnières (Seine) France.
 *8,579 (1902). Fountain pen. F. C. Brown, New York.
 8,612 (1902). Pneumatic tire with non slipping tread. C. H. Wilkin-son, Huddersfield.
 8,707 (1902). Pneumatic tire with metal protected tread. C. D. Cas-sidy, Dublin.
 8,722 (1902). Apparatus for supplying fresh air for respiration. I. Etrich, Oberaltstadt, Bohemia.
 *8,739 (1902). Method of vulcanizing pneumatic tires [in a machine which can be quickly opened and closed]. A. J. Boulton, London. (A. H. Marks, Akron, Ohio.)
 *8,802 (1902). Golf ball. F. H. Richards, Hartford, Connecticut.
 *8,803 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *8,804 (1902). Golf ball. *Same*.

THE GERMAN PATENT RECORD.

PATENTS GRANTED.

- 144,772 (Class 30f). Bed bathtub of waterproof texture or rubber. R. Cramer, Gr. Tabarz. July 29.
 144,981 (Cl. 30d). Plunger for syringes with rubber piston-packing. Frau R. Dètert, Berlin. Aug. 26.
 145,019 (Cl. 77a). Implements for room gymnastics with rubber bands or cords. T. Barth, Jülich. Aug. 26.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 203,787 (Class 3b). Tape prepared with rubber to retain the shape of outer garments, sticking to the goods when pressed with hot iron, to avoid sewing. C. Thill, Cologne. July 29.
 203,987 (Cl. 47f). Seamless rubber hose for high pressure, with spiral wire. Vereinigte Berlin-Frankfurter Gummiwaaren-Fabriken, Gelnhausen. July 29.
 204,181 (Cl. 47f). Sleeve like rubber ring of conical cross section for the screw ends of hose. Frau F. Reicherl, Giesenhäusen. July 29.
 204,594 (Cl. 3b). Elastic cravat fastener for turn-down collars. A. Wagner, Hamburg. Aug. 5.
 204,234 (Cl. 30e). Elastic band with loin bolster to assist mares in foaling. E. Warltitz, Niederwürfschnitz. Aug. 5.
 204,581 (Cl. 70c). Ink well with adjustable rubber funnel for regulat-ing height of ink. E. Klemm, Waldenburg. Aug. 5.
 204,225 (Cl. 30h). Rubber ring for corns. P. Poppelsdorf, Frankfurt a/M. Aug. 12.
 204,970 (Cl. 47f). Hose in the end of which is pressed a soft rubber shell so that a pressure chamber is formed between it and the walls of the hose. Vereinigte-Berlin Frankfurter Gummiwaaren-Fab-riken, Gelnhausen. Aug. 12.
 205,265 (Cl. 82d). Rubber packing rings with centering collars for centrifugal pumps. B. A. O. Prollius, Copenhagen. Aug. 19.
 205,862 (Cl. 30c). Seamless rubber cushions. Vereinigte Gummi-waaren-Fabriken-Harburg-Wien, Wimpasing. Aug. 26.
 205,595 (Cl. 77c). Rubber tips for billiard cues. Frau E. Weiss, Neu-Weissensee. Aug. 26.

APPLICATIONS.

- 13,139 (Class 71a). Shoe with elastic tread. H. Dick, Mülhausen. Aug. 5.
 27,928 (Cl. 71a). Elastic protection for shoe heels. T. Hille, Berlin-Schoeneberg. Aug. 12.
 6,746 (Cl. 71a). Combination rubber and leather heel. J. J. Jones, New York. Aug. 26.

THE United States consul at Copenhagen reports to his gov-ernment [August 11]: "A prominent firm of vehicle manufac-turers in Copenhagen wish to correspond with a reliable firm in the United States with a view to purchasing rubber tires for use in the manufacture of vehicles. Very few rubber tire vehi-cles are in use in Denmark at present, and the demand for this class of goods is not great. There is a growing demand, how-ever, and the trade is likely to develop very satisfactorily. Let-ters forwarded to this office in reply to the above request will be promptly delivered."

HOW "THE PARA RUBBER PLANTATION CO." WORKS.

THE second semi-annual dividend of 6 per cent. of the Para Rubber Plantation Co., earned on its rubber trading operations in Venezuela, was due on September 20, according to an announcement made by the company on August 11. An unusual feature of the announcement was that the promised dividend was to apply to any treasury stock that might still be sold, prior to September 16, as well as to the shares already disposed of. A company that can earn dividends on unsold shares of stock lying in its treasury must be admitted to have achieved success in financial management in an exceptional degree. In a number of newspapers, early in the past month, an advertisement

NOTICE OF BIRTH STOCKS.

NOTICE.

On account of negotiations consummated in Europe for the sale of the entire balance of the Treasury stock of the Para Rubber Plantation Company, it has been decided to withdraw the stock from the market on September 16th, 1903, at 5 P. M.

Intending purchasers should at once indicate size of block desired, as preference will be given to subscriptions in the order of their receipt. Price of shares \$10.00 each, par value.

PARA RUBBER PLANTATION CO.,

52 Broadway, N. Y. City.

ing office—that of the Standard Securities Co.—where he met a gentleman answering to the name of Jack Merrill, whose office is understood to be that of secretary of the Standard Securities Co. Mr. Merrill commended the rubber proposition very highly, and talked frankly and freely in regard to the management of the Para Rubber Plantation Co., giving out some details not hitherto published, and which may be of interest to some of our readers.

NARRATIVE OF MR. JACK MERRILL.

"It is just this way," explained Mr. Merrill; "the Standard Securities Co., which I represent, is purely a selling concern, and has no interest in the Para Rubber Plantation Co. further than in disposing of its stock. The Rubber company was organized last year with \$5,000,000 capital, divided into \$10 shares. Of this stock \$1,000,000 was held in reserve and will not be issued. The incorporators, including Mr. John Cudahy of Chicago and several other well known men, took \$1,250,000 of the stock, leaving \$2,750,000 as treasury stock to be placed with the public. The company placed a portion of this stock, and last spring the Standard Securities Co. took an option on all the remaining treasury stock of the Rubber company. We did not buy the stock, and we do not own a share of it now, but we took an option on placing it. We have sold a considerable amount and will continue to sell until September 16, when we surrender our option and go out of the business."

"What happens then?"

"Mr. F. M. Crawford, of the Para Rubber Plantation Co., who has just returned from Europe, has made a deal with certain rubber men of Antwerp and Paris, who agree to take all the stock that may be left in the treasury on that date. They agree to develop and gather the rubber on our holdings on the Casiquiare river, and to pay a royalty on the rubber gathered. A representative of the European syndicate has sailed from Antwerp, to conclude the transaction, and is due in New York next Friday [September 11]. After September 16, there will be no stock for sale to the American public."

"Will you tell me something of the history and holdings of the Para Rubber Plantation Co.?"

"After Dr. Lucien Morisse made his report to the French government* on the vast possibilities and enormous profits in the rubber gathering industry, a number of capitalists in this country were interested and this syndicate was formed. The Para company was organized and at once set about securing the valuable territory on which Dr. Morisse reported. The result was that the company purchased all the land bordering on the Casiquiare, between the Negro and the Orinoco rivers—a distance of 175 miles. A strip three miles wide on one side of the river and five miles on the other was purchased—in round numbers 1,000,000 acres. On this property various reports were made as to the number of bearing rubber trees, some estimating as many as 20 to the acre. We feel that we are very conservative when we estimate that the property will average 6 trees to the acre, or 6,000,000 trees all told. The idea is to establish trading stations or posts all along the river, and to send the natives out from these points to gather rubber. In fact, a portion of this work was already accomplished when we took hold. An Italian syndicate, the head of which has since died in New York, had been gathering rubber in this territory and had a number of posts in operation. The first thing the Para Rubber Plantation Co. did was to buy this entire outfit, thus providing itself with a number of well equipped stations. The company is now gathering rubber there and as rapidly as posts can be developed and forces organized the output will be increased. The gathering is done by the native Indians and half breeds, somewhat on the grub stake principle of the miners, the company providing the sustenance for the workers when they go into the woods and taking their rubber in payment when they come out."

"How much rubber has been actually gathered so far?"

"The company's output this year has been 300,000 pounds. That rubber is all ready to come out now—in fact, should have gone down the river before this time. This we feel is but a drop in the bucket, for a full grown rubber tree should yield 5 pounds per year, and, as I told you, we have at least 6,000,000 trees on our original purchase, and as we have just purchased 1,250,000 acres more on the Orinoco, adjoining the property on the Casiquiare, we will more than double our holdings. This new purchase is as rich in rubber forests as our present property, and will yield untold wealth when developed."

"What about the stock as an investment?"

"It seems to me, and I am in the stock selling business, not in the rubber business, that nothing offers more promise. The

*An official copy of Dr. Morisse's report, in THE INDIA RUBBER WORLD office, was printed in Paris in 1891. It relates to observations made by him in 1889. The Para company was not incorporated until August 1902.—F. F. F.

riches of this property are something immense. The company was organized by level headed men of means and its stock is fully paid and now assessable. It paid last March its first semi-annual dividend of 6 per cent."

"How did it pay it a dividend if it has never yet gathered and sold any rubber?"

"It paid it out of the profits that accrued on the rubber it took over with the holdings of the Italian syndicate. A considerable amount was then secured and on this the profit was made. It has now declared its second 6 per cent. dividend, which will be paid on September 20, to stockholders of record on September 16. The money for this dividend was advanced by three of the directors, one of them being Mr. Cudahy, and came about in this way. We have the 300,000 pounds of rubber ready for sale, but we failed to get it down the river in time. At a meeting of the directors in Chicago four weeks ago the question of passing our dividend until our product got out was discussed. Mr. Cudahy was very emphatic in his opposition to such a course, saying that many of his employes and friends had invested on the belief that they would receive a dividend this fall, and they ought to get it. He then proposed with two other directors to advance the necessary cash, taking the rubber of the company on consignment as payment for the loan. The checks for the second dividend will therefore be sent out on the date mentioned."

"If an investor buys stock now will he receive his dividend at once?"

"Certainly; any purchaser before September 16, will participate in the dividend. A man who buys on the 15th and has the stock transferred that day will receive a check for his dividend on the 20th."

"Do you mean that Mr. Cudahy and the other two directors advanced \$240,000 on 300,000 pounds of rubber, or enough to pay a 6 per cent. dividend on the \$4,000,000 worth of stock upon which the company operates?"

"Oh no! The dividends are only paid on the stock held by the public, something like \$700,000 worth. The \$2,000,000 of treasury stock draws no dividends of course, and the organizers, who hold \$1,250,000 worth of stock received no dividends in March nor will they be paid dividends now. The dividend paid in March amounted to only about \$12,000, the public holdings of stock not then being large."

THE SILENCE OF MR. JOHN CUDAHY.

ON September 12 THE INDIA RUBBER WORLD addressed a letter to Mr. John Cudahy, in Chicago, advertised as the presi-

dent of the Para Rubber Plantation Co., advising him of the statements made at the New York office of his company, and asking for their confirmation. No reply being received, our Chicago correspondent was asked to interview Mr. Cudahy, and on September 23 a telegram was received from Chicago stating: "Cudahy left to-day for New York on Para matter. Refused to talk. May when returns." Mr. Cudahy's presence in New York on September 25 was ascertained, when an attempt was made to see him. The only result was an interview with Mr. Cudahy's counsel, Mr. Samuel N. Gardenhire—in which it was explicitly denied that Mr. Cudahy had advanced any funds for dividends—and the following letter:

LAW OFFICES OF
GARDENHIRE & JETMORE.

Samuel M. Gardenhire.
Aaron R. Jetmore.

Atlantic Building,
49 Wall Street.
NEW YORK, September 29, 1903.

TO THE EDITOR OF THE INDIA RUBBER WORLD:

American Tract Society Building, New York City.

Dear Sir: With reference to the article which appeared in your September issue relating to the Para Rubber Plantation Company, and the conference had with your Mr. Hill by our Mr. Gardenhire, we have to say as follows:

We must reiterate the statement that the article is misleading in its essential details and in consequence, calculated to do the company great damage. Any further publication by you along similar lines must necessarily tend to enhance this injury. We feel that it is due to you to say that the standing of Mr. Cudahy, its President, is such that it should be a personal guaranty to every stockholder of this Company, as well as to yourself, that it will carry out every obligation that it has made, or shall make. It is in possession of a large and valuable tract of rubber land comprising about one million acres, and has made arrangements to purchase an additional tract of one million, two hundred and fifty thousand acres more. It has three agents, two upon the property and one at Caracas, prosecuting the work of the Company, owes no debts, is preparing to broaden its character and enlarge its facilities for useful labor.

It has withdrawn its stock from the market because of negotiations with foreign capitalists who have become interested in the enterprise, and Mr. Cudahy has assured them and us that he will give the management of this company his personal attention. This assures it the direct benefit of his wide experience and great executive ability. He has instructed us to take such necessary legal steps as are necessary, looking to the accomplishment of this result and we trust you will see your way clear to refrain from any further comments that can do no one any good and our clients an incalculable business injury. Very truly yours,

GARDENHIRE & JETMORE.

THE INACCESSIBLE CASIQUIARE.

By Lyonel Garnier (Manáos.)

THE Casiquiare is a narrow (for South America), swift flowing, and little known river which, rising near Mount Lesseps, receives from the north the Cunuahú, an affluent of the Orinoco, and joins the rio Negro a little above the Venezuelan town of San Carlos. The Cunuahú rises somewhere in the *Sierra de San Carlos* and divides, one

branch flowing into the Casiquiare and the other into the Orinoco. Thanks to this, the Casiquiare serves as a natural canal, joining the two great rivers, Orinoco and Negro.

Only one fall and three rapids exist on the Casiquiare; the fall, a few hours' journey above the confluence with the rio Negro, and the rapids all three close to the mouth of the Cunuahú. The falls are passable at high water, and have been traversed by a steam launch the *Leas*, belonging to an Italo-Venezuelan expedition which ascended this river and the Orinoco as far as San Fernando de Atabapa.

The great difficulty which any one attempting to do business on the Casiquiare would encounter is the navigation of the rio Negro, only feasible with stern wheelers or other very light draft boats as far as Trinidad, and from thence only to be done in native craft, paddled and carried or poled up the fifteen or

NOTE.—Our correspondent's reference to the means whereby the Casiquiare connects the Orinoco and Negro rivers involves the mention of a river (the Cunuahú) not shown on any map in THE INDIA RUBBER WORLD office. But the whole region of the upper Orinoco has been imperfectly mapped as yet. The specially made map shown in connection with this article is based upon several accepted authorities, but is not offered as an absolutely correct delineation of the course of the Casiquiare. What is very much more to the point is whether the Casiquiare region can be reached readily from the outside—in the manner, for instance, claimed by the Para Rubber Plantation Co.—and in regard to this all authorities are agreed that the rivers leading to that region are not now commercially navigable.—THE EDITOR.

sixteen rapids which divide the place from Cucuhy. From Cucuhy the river is navigable in launches as far as the mouth of the Casiquiare in all seasons. The Casiquiare could be navigated with very powerful light draft steamers at high water—March to June—and during the rest of the year in canoes.

Little is known of the natural products of the Casiquiare, but it may safely be asserted that up to the present not a single kilogram of rubber—fine, scrap, or slab—has been shipped from this river. The late Chevalier Teresio Piasco, chief of the Italo-Venezuelan expedition to the upper Orinoco, informed the writer that Caucho and Balata were abundant; he was silent, however, as to the presence of *Hevea* rubber, although, as it is found at the mouths of the river, both on the Orinoco and the Negro, it is probable that a careful search would reveal its presence on the banks of the numerous affluents of this river.

The climate is said to be healthful. Don André Level Gutierrez, actual governor of the province, has for some years sent men to this river in search of piassava, and has never encountered a mortality above the average. The temperature varies little, 35° to 36° Centigrade being the average; no data is at hand as to rainfall, but thunderstorms are said to be frequent. Like all other parts of this region, the valley of the Casiquiare is uninhabited. Nomadic Indians of the Vare tribe visit it occasionally on hunting expeditions, but that is all. Fish should be abundant, but fresh water turtle are absent.

The Venezuelan government are known to have given various grants of land on the upper Orinoco, and to have offered special inducements to settlers, but hitherto without avail, owing to the enormous difficulties of transport. The only way to work the Casiquiare satisfactorily would be by the construction of three roads—one from Trinidad to Camanáos, in Brazil; one round the falls at the mouth of the Casiquiare; and another further upstream to avoid the rapids. The first would be about 80 miles long over rocky and very uneven ground, the forest being chiefly small trees and beechwood, about five bridges would be required. As to the others nothing certain can be said, owing to lack of information, but the first would be about one mile and the second about 10 miles long.

In parenthesis it may be mentioned that up to May, 1903, when the last news was received from San Carlos, nothing was known there officially as to any grant of lands on the Casiquiare, the writer's informant being the governor himself. The Venezuelan provinces of Alto Orinoco and Amazonas do all their business with Manáos, the falls and rapids of the Orinoco being even worse than those of the rio Negro. They come down from July to November in big canoes and return in steamers to Trinidad, where they reëmbark in their canoes.

From four to five months are spent in the round trip. Whether the falls are passable or not at other seasons of the year is hard to say, but the Venezuelans, and those Brazilians who live on the upper Negro, never do pass them at other times.

During the past year Venezuela exported via Manáos:

Rubber, fine.....	48,354 kilograms
Rubber, scrap.....	20,240 "
Piassava.....	25,211 "

Nearly the whole of the above is shipped to New York. It will be seen, therefore, that the trade of this region is very small, the rubber output being less than that of many *seringales* on the Acre or upper Juruá.

Seeing that foreigners located in the best parts of the Amazon valley have hitherto failed to succeed, it is to be feared that on the Casiquiare they would inevitably meet the same fate. The difficulty in obtaining men to work there, the enormous

expense of transport, and the unsettled condition of the country (the Venezuelan province of Amazonas is notorious as a hot bed of pronunciamientos and revolutions, three governors having been disposed by force of arms in as many years) would form insuperable objections to such an enterprise.

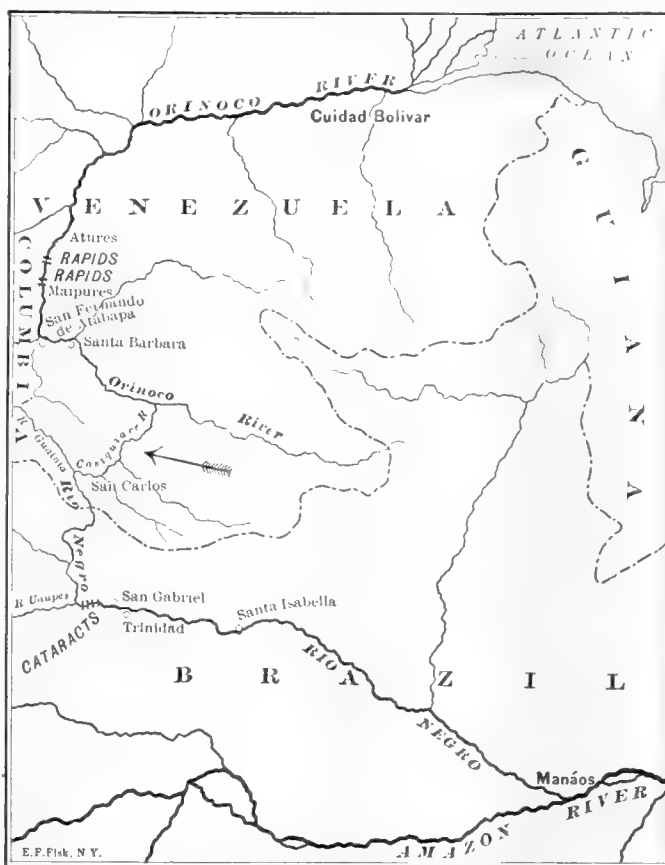
If the manager be a foreigner he will ignore the most essential details of the rubber business. If he has the necessary experience, he can get a better berth on the lower Amazon, or find houses willing to set him up for himself. Should he be a Venezuelan he will meddle with politics, with disastrous results for the company. Brazilians won't go; there are plenty of good rubber lands awaiting exploration here yet, and they naturally prefer to stay at home.

The greatest difficulty after transport would be the *personnel*. The days when one could get hundreds of Cearenses for the asking are gone. Not only

does Ceará impose a heavy tax on every person leaving that state, but the men themselves have had their eyes opened and know that rubber collecting is one of the most sickly trades in existence, and about the worst paid. It requires a certain skill, too, not to be found in every raw hand as many owners of land on the Purús and Juruá know to their cost.

In Peru the supply of rubber workers is inadequate to the demand. Venezuela, as mentioned, is even worse off in this respect, and Europeans cannot stand the climate. West Indian blacks are no good; they have been tried here and found wanting. Chinese might serve, but there is a very considerable prejudice against them which may any day culminate in a law expelling them. In short, as long as there is rubber here, below the falls, it is utter folly to go for it to places like the Casiquiare, where the product hardly compensates the expense of the transportation.

Manáos, Brazil, August 20, 1903.

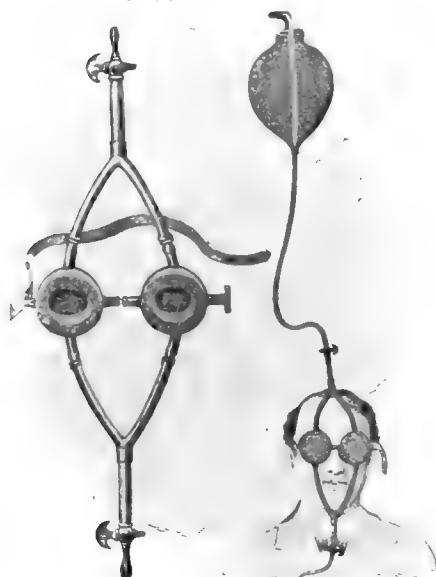


THE CASIQUIARE AND ITS OUTLETS.

NEW GOODS AND SPECIALTIES IN RUBBER.

NEW TYPES OF ICE AND WATER BAGS.

THE water bag and the ice bag made of rubber for local applications have been in use for many years and almost any civilized being the world over recognizes the ordinary type at sight. Some very valuable and ingenious



GOODRICH EYE PAD.

applications of the principle have however lately appeared.

For example, the Goodrich Eye Pad, which is illustrated herewith, is new, ingenious, simple, and easily understood. It is designed for the continuous flow of either hot or iced water, through a pair of thin rubber rings which lie against the eye-lids, conforming to the shape of the ball and yet without pressure. The flow of the water can easily be regulated so that it be a continu-

ous stream or simply a drop at a time. The application can be made to one eye or to both. These goods are made of a very high grade of stock, with a soft finish, and show throughout the best workmanship.

Along the same line of invention is the Goodrich Mastoid Ice Bag and the continuous flow hot or cold water mastoid bag.



GOODRICH MASTOID ICE BAG.

The former of the two is a fine Pará rubber bag, very light and easily secured in its place, covering the mastoid process only, but fully. For the same purpose is the continuous flow Mastoid Bag, which is arranged so that the upper tube may be readily attached to a fountain bag or reservoir and a



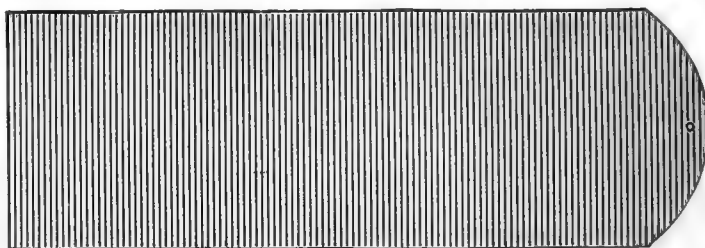
GOODRICH FUNNEL DRAIN.

continuous flow of iced or hot water passed over the mastoid process. Another Goodrich appliance that is exceptionally useful for carrying off aural discharges or fluids used in irrigating is the Goodrich Funnel Drain. This can be readily adjusted under the ear as shown in the illustration, but is equally applicable for treatment of the mouth or nose. These goods

belong to a varied and very complete line produced in the special surgical department of The B. F. Goodrich Co., Akron, Ohio.

THE PERFECTION BATH TUB MAT.

THE ordinary porcelain bath tub is a very necessary but a somewhat treacherous article of household economy. Owing to its high polish it is slippery, and many a fall has resulted from an incautious movement when getting in and out. The rubber mat shown in an accompanying illustration obviates every bit of this trouble. It fits snugly in the bottom of the



tub, to which it adheres firmly. The stock of which the mat is made is an excellent white compound, as soft as velvet, its surface being slightly corrugated. After use it is easily rinsed off and dries in a very few minutes. It is made in two sizes—12 × 30 and 12 × 26 inches. [Perfection Rubber Co.—John J. Cook, No. 923 South Clinton avenue, Trenton, New Jersey.]

PNEUMATIC PEW CUSHIONS.

IOWA newspapers chronicle the invention, by one Hans Neimend, of Ida Grove, of a device whereby occupants of church pews, by dropping a nickel in the slot, can be automatically provided with a pneumatic cushion made of India-rubber. Just what denomination will be first to adopt this improvement, it is hard to say; but those who go to church to rest will at once hail Mr. Neimend as a sane, practical benefactor of the human race.

THE "FAULTLESS" ONE-PIECE SYRINGE.

A MOST beautiful piece of rubber work is the "Faultless" one-piece bulb syringe. The surface of both tube and bulb is actually as smooth as glass, and of a dark crimson color, with a very curious and attractive mottling. The goods are steam cured and are certainly fully as beautiful and more novel in finish as any foreign or domestic products in the same line that have yet appeared. [The Faultless Rubber Co., Akron, Ohio.]

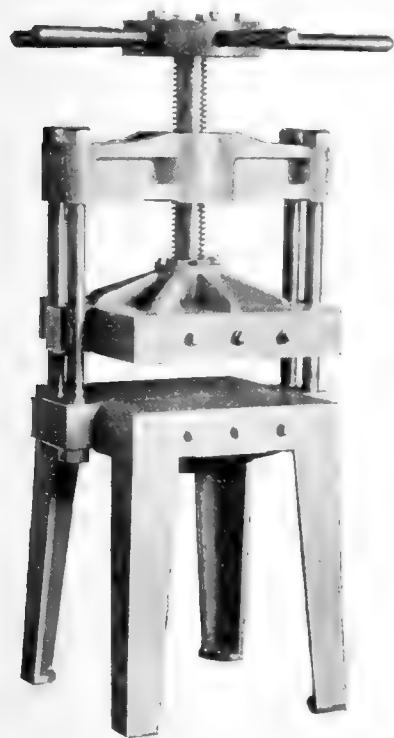
THE GRAY RUBBER GLOVE.

WHEN the rubber glove first saw the light it was black, heavy, cumbrous, and fitted with seams, stays, and patches. Later came the tan glove, much lighter and a pretty piece of work. Then in the process of evolution came the "dipped" glove, seamless, the color of pure rubber, and a genuinely artistic bit of workmanship. The use of these gloves by surgeons was wonderfully increased by the thin dipped glove that preserved the sense of touch so perfectly while affording perfect protection to both patient and operator. A curious phase of the rubber glove habit is that surgeons soon get accustomed to their use and call for heavier gloves. To cater to this demand a new seamless gray glove is now on the market, that has found a warm welcome and is meeting with a gratifying sale. [The Miller Rubber Manufacturing Co., Akron, Ohio.]

RUBBER FACTORY APPLIANCES.

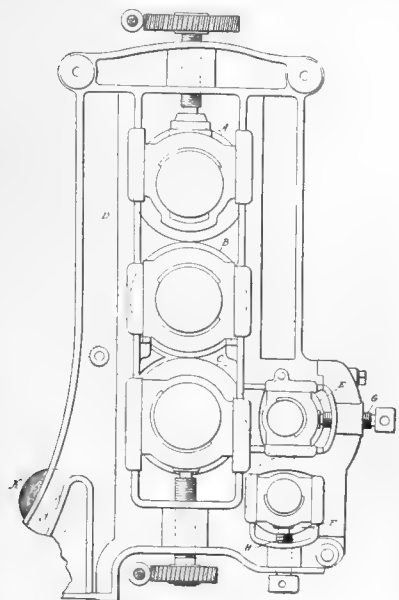
THE PIERCE UPPER CALENDER.

THE superintendent of the rubber factory of L. Candee & Co. (New Haven, Conn.), Mr. John H. Pearce, is already well known to the rubber manufacturers of the world through his inventions, particularly in the line of calenders for shoe work. His latest production, a five roll machine, designed to save waste in sheet goods, that are, after coating, cut into shapes that do not utilize all of the surface spread, is shown in the accompanying outline drawings. In this instance the calender is adapted to the production of shoe uppers. The plan

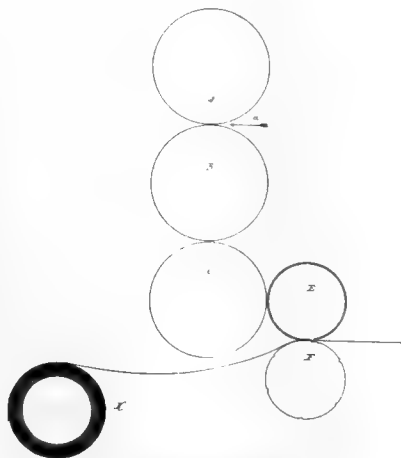


THE PROBERT PRESS.

FOR ordinary everyday mold work in a small factory the "Spider Press" is about as useful a mechanism as can be found. The illustration is taken from a photograph of one 20×20 inches in size. It is light—weighing but



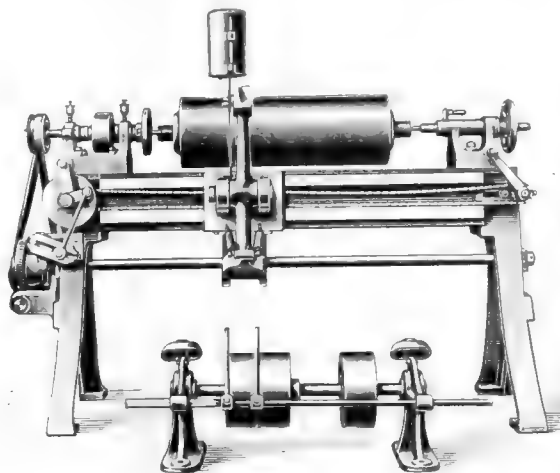
SIDE VIEW.

ARRANGEMENT OF THE ROLLS.
THE PIERCE UPPER CALENDER.

1480 pounds—and strong, the tie rods being of hammered steel, and as rapid as is consistent with the power, the pitch of the steel screw being two threads to the inch. The lower end of the screw is fitted with an anti-friction stop in the oil well in the top of the upper platen. [Excelsior Machine Works, Akron, Ohio.]

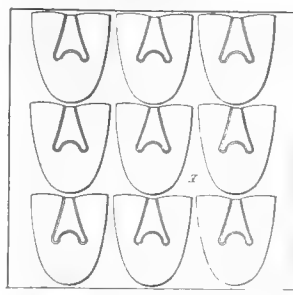
AUTOMATIC CUTTER FOR INSULATING TAPE.

A MACHINE for cutting tape—either pure, gummed, cloth surfaced, or non-gummed cloth—which operates automatically, is shown in the accompanying illustration. As is usual, the material to be cut is first wound tightly on a gummed wooden or steel mandrel, and may be put into the roll 1 meter [=39.37



CUTTER FOR INSULATING TAPE.

inches] in length to about 200 millimeters [=about 7.9 inches] in width. The extreme ends of the roll are gummed, so that it is impossible for the roll to unwind during the cutting. The roll after being placed in the machine comes in contact with a knife to which is attached a lever, the roll turning to the left hand—that is, in the opposite direction to that of the usual lathes. In action the lever and the knife moves forward by means of an eccentric and is released and set back by means of a spring. The feed is accomplished through an accurately spaced link chain which can be regulated to $\frac{1}{10}$ of a millimeter [1 millimeter=.0394 inch]. The machine is capable of a great range of work, strips as small as $\frac{5}{80}$ of a millimeter being accurately cut. When the knife has made the last cut on the roll the machine automatically disconnects itself leaving the rolls of tape ready for removal and wrapping. By means of this machine, one workman can attend to five or six of them at the same time, which insures a large product. [Max Müller, Hannover-Hainholz, Germany.]

PLAN VIEW
OF SURFACE OF PATTERN ROLL

When the knife has made the last cut on the roll the machine automatically disconnects itself leaving the rolls of tape ready for removal and wrapping. By means of this machine, one workman can attend to five or six of them at the same time, which insures a large product. [Max Müller, Hannover-Hainholz, Germany.]

THE OBITUARY RECORD.

CHRISTOPHER ROBERTS.

CHRISTOPHER ROBERTS, president of the C. Roberts Rubber Co., of Newark, New Jersey, died at his home in that city on September 20, in his seventy-seventh year. Mr. Roberts was born in 1827 in Manchester, England, where, after remaining in school as long as his parents, who were in moderate circumstances, could afford, he found employment in an India-rubber factory. He speedily became an efficient workman, particularly in the making of stationers' rubber goods. In 1849 he came to the United States to install some machinery for a relative who was interested in the rubber industry, and,



after looking the field over, he decided to remain here and invest the small capital he had saved in a factory of his own. Beginning in a small way at Providence, he succeeded, and about 1858 he removed his business to Newark, shortly afterward making a contract with a large pencil manufacturer for rubber tips, which arrangement was the beginning of what

developed into an important business. The pencil manufacturer was Eberhard Faber (New York), who became a partner in the business, conducted for a number of years as Christopher Roberts & Co.

Early in 1899 the company became a corporation under the laws of New Jersey, with Mr. Roberts president and Mr. Faber vice president. The capital stock was \$150,000, the majority being held by Mr. Roberts. The factory employed about 100 people, and was in constant operation, making only erasers and elastic bands, the total output being taken by the firm of Faber.

For two years past Mr. Roberts was prevented by failing health from giving active attention to business. Mr. Roberts at no time had any labor trouble in his factory, and there are men who have worked in the factory since they were boys. Mr. Roberts was unostentatious in his life, and is known to have disbursed in a quiet way a great deal of money in charity, as also did Mrs. Roberts, who died fifteen years ago. The only surviving member of the family is a daughter, Mrs. George S. Coxe, whose husband is connected with the factory. The two sons both died several years ago. Mr. Roberts was a member of the Newark Board of Trade, and until three years ago was a director in the Essex County Bank. He was a regular attendant at Trinity Church (Episcopal). Aside from his interest in the rubber works, Mr. Roberts is understood to have left considerable estate. It is stated that there will be no change in the method of carrying on the business of the Roberts company.

* * *

MARTIN V. BEIGER, president of the Mishawaka Woolen Manufacturing Co. (Mishawaka, Indiana) died at South Bend, on September 26, following an operation for appendicitis on September 21. Mr. Beiger was about 58 years of age. He

served in the civil war in the One Hundred and Thirty-eighth Indiana regiment. At the time of his death he was president of the board of trustees of De Pauw University and a trustee of the Chautauqua Assembly, Chautauqua, New York. Mr. Beiger established, about fourteen years ago, in connection with capitalists of South Bend and Mishawaka, a woolen manufacturing business, an important product of which was supplies for "combination boots." The company next began buying rubber overs, in order to sell the boots complete. In November, 1896, THE INDIA RUBBER WORLD stated: "The Mishawaka Woolen Manufacturing Co., it is estimated, will use 75 carloads of rubber overs this season, in combination with their knit boots and lumbermen's socks." Two years later a rubber department was added, and placed in charge of Emmett A. Saunders, who had been general superintendent of factories of the United States Rubber Co., the capital of the company being increased for this purpose from \$500,000 to \$700,000. The company's sales in 1889 were \$65,000; in 1902 they amounted to \$4,048,000.

* * *

JOHN FREDERICK SEIBERLING died on September 6, at his home in Akron, Ohio, in his seventieth year. He was a native of Ohio, belonging to an extensive family whose history in that state runs back to 1828. Mr. Seiberling was born on a farm, where the work of harvesting suggested labor saving ideas which he applied to mowing and reaping machines, in the manufacture of which he acquired a fortune. The factory of the J. F. Seiberling Co. became one of Akron's largest and most profitable industries. He became active in many other business enterprises, and was the founder of The India Rubber Co., of Akron, in 1896, employing a factory he had used formerly for making reapers. Mr. Seiberling was the father of Frank A. Seiberling, general manager of the Goodyear Tire and Rubber Co. (Akron); Charles W. Seiberling, secretary of the same company; and Mrs. S. S. Miller, whose husband is connected with the Buckeye Rubber Co. (Akron). Two brothers of the deceased, James H. Seiberling and Monroe Seiberling, are interested in the Indiana Insulated Wire and Rubber Co. (Jonesboro, Indiana), the former being president. The Seiberling interests also controlled the late Peoria Rubber and Manufacturing Co. (Peoria, Illinois), the factory of which was closed on being acquired by a combination. Mr. Seiberling was one of the most philanthropic and liberal men of Akron, where his loss is keenly felt. The funeral services, held at his late residence on September 8, were attended by a large number of Akron's most influential citizens.

* * *

CHARLES E. BREEDEN, of Glenridge, New Jersey, and a retired business man of New York, died on August 29 at his summer home in Laconia, New Hampshire. He was born in Boston, June 10, 1842, being the son of Abner Breeden, the first selling agent employed by the Ford Rubber Co., who began the manufacture of rubber shoes at New Brunswick, N. J., in 1845. Charles entered the selling agency after it became Breeden & Southwick (New York), handling the product of the leading rubber shoe manufacturers. He later volunteered in the civil war, after which he returned to his old firm, from which he retired in 1871, possessed of a comfortable fortune. His uncle, Benjamin F. Breeden, also of Breeden & Southwick, was one of the founders of the North British Rubber Co., Limited.

THE attorney general of New Jersey has decided that rubber stamps cannot be used in marking ballots to be used in voting in that state this year, for or against the proposed amendments to the state constitution.

NEWS OF THE AMERICAN RUBBER TRADE.

ADVANCE IN RUBBER TIRE PRICES.

SEVERAL leading rubber tire manufacturers have withdrawn all prices, in consequence of the increasing cost of raw materials, in harmony with an agreement reached at the recent meeting in New York city, at which nine factories are understood to have been represented. The subject is treated at further length in the Akron correspondence which appears in this issue.

RUBBER GOODS MANUFACTURING CO.

THE equipment of the factory of The India Rubber Co., at New Brunswick, New Jersey, has progressed steadily since our last report, and it is now practically ready for operation. The product of the company will consist largely of tires, as was true of the factory operated under the same name at Akron, Ohio, burned last March, and orders are now being taken. The organization of the company has been completed by the election of J. C. Wilson, president; Charles A. Hunter, vice president; and W. L. Wild, secretary and treasurer. Mr. Wilson for some time past has been manager of the rubber tire factories of the Rubber Goods Manufacturing Co. under the presidency of Lewis D. Parker. Mr. Hunter, of the Peerless company, is vice president of a number of the companies in the combination. Mr. Wild was secretary of The India Rubber Co. at Akron.

In addition to the other offices held by him, Mr. Hunter has been chosen vice president of the Mechanical Rubber Co. and the New York Belting and Packing Co., Limited, instead of Talbot J. Taylor. Also, as vice president of the Hartford Rubber Works Co., instead of F. H. Turner, who, for some time past, had held the two positions of vice president and treasurer.

At the annual election of Morgan & Wright, Incorporated (Chicago), in October, it is understood that Charles J. Butler will be chosen president.

BOSTON WOVEN HOSE AND RUBBER CO.

EIGHTEEN electric motors are being installed at the factory, having an aggregate of 615 HP. These will be placed in the most favorable positions and connected direct with the various lines of shafting. During the month the company's headquarters, at Cambridge, have been visited by Mr. J. V. Selby, manager of their Pacific coast branch (San Francisco), and Mr. W. O. Franklin, who covers the southern part of that territory and Mexico.

THE NEW CABLE TO ALASKA.

A SUBMARINE cable is about to be laid between the United States (at Seattle, Washington state) to Sitka, Alaska. There will be a branch from the station at Baronoff to Juneau, Alaska, to connect with the line laid a few years ago between Juneau and Skagway. The cable will be laid by the government, through the agency of the Signal Service. From that office the information is gained that the length of cable ordered is as follows:

Shore end.....	10 miles.
Intermediate	409 "
Deep sea.....	940 "
Total.....	1359 "

In the manufacture of the cable a few feet more than the mileage here shown has been supplied of each type, but for convenience sake the fraction is not shown. This will be the

longest cable yet manufactured in America. It has been turned out, at the rate of 20 miles a day, by The Safety Insulated Wire and Rubber Co. (New York). The insulation is of Pará rubber, applied by the seamless process of the company referred to. It is expected that cable communication with Seattle will be established by the end of November.

CONVERSE MEMORIAL DAY.

On Friday, September 4, occurred the sixtieth anniversary of the marriage of Elisha Slade Converse and Mary Diana Edmunds, who, since 1850, have made their home at Malden, Massachusetts. In 1853 Mr. Converse became treasurer of the Boston Rubber Shoe Co., in 1856 president of the Malden Bank, and in 1882, the first mayor of Malden. During this long period the family has been identified in very many ways with the business and social life of Malden, and the celebration of the golden wedding of Mr. and Mrs. Converse, ten years ago, was participated in by so many persons as to make it a notable event in the history of the city. This year, instead of another extensive celebration, the family decided to defray the expenses of the excursion on September 4 of the Boston Floating Hospital—an important and long established charity. The date mentioned was, therefore, designated as "Converse Memorial Day." The management of the hospital sent Mrs. Converse sixty beautiful white asters, in remembrance of the anniversary. A recent day on the hospital program was known as "Marion Day," on account of the expenses of the excursion on that date being provided by an entertainment given at "The Moorings," the Summer residence, at Marion, Massachusetts, of Colonel Harry E. Converse.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Aug. 22	2,300	13	11	1,270	40	39
Week ending Aug. 29	940	13 ¹ / ₈	12 ¹ / ₂	145	42	42
Week ending Sept. 4	2,510	13 ¹ / ₈	12 ³ / ₈	570	43	42 ¹ / ₂
Week ending Sept. 12	520	12 ³ / ₄	12 ¹ / ₂	510	42 ¹ / ₄	42 ¹ / ₄
Week ending Sept. 19	1,100	12 ³ / ₄	11	400	42 ³ / ₄	40
Week ending Sept. 26	320	10 ¹ / ₂	10	400	37 ¹ / ₂	35

RANGE FOR TWO YEARS.

Common.			Preferred.		
1902.....	High 19 ⁵ / ₈	Low 14	High 64	Low 49 ¹ / ₂	
1903.....	19 ¹ / ₈	7	58	30 ¹ / ₄	

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Aug. 22	3,400	15 ¹ / ₄	14	300	70	69 ³ / ₄
Week ending Aug. 29	5,881	19	14 ¹ / ₄	710	75	70
Week ending Sept. 4	4,891	19 ¹ / ₂	18 ¹ / ₂	100	70	70
Week ending Sept. 12	2,010	19 ¹ / ₄	18 ¹ / ₂	—	—	—
Week ending Sept. 19	3,050	18 ³ / ₄	15 ³ / ₄	810	72	70
Week ending Sept. 26	1,400	16	15	720	70	69 ¹ / ₂

RANGE FOR TWO YEARS.

Common.			Preferred.		
1902.....	High 25 ¹ / ₈	Low 17 ¹ / ₄	High 74	Low 63	
1903.....	30	12	84 ¹ / ₂	60	

CONCORD RUBBER FACTORY FOR SALE.

THE plant occupied for several years past by the Concord Rubber Co., at Concord Junction, Massachusetts, and up to May 1 last, when the company ceased operations, is now adver-

tised for sale. The plant is in condition for carrying on the manufacture of rubber goods, or may be readily adapted for other purposes. Further details are contained in the advertising pages of this Journal.

ANOTHER SINGER FACTORY IN EUROPE.

THE Singer Manufacturing Co. will establish a sewing machine factory in Germany, at Wittenberge, midway between Hamburg and Berlin. This will be the Singer company's fourth factory in Europe, the others being located (1) at Kilborne, near Glasgow, Scotland; (2) at Floridsdorf, near Vienna; and (3) at Poldosk, between St. Petersburg and Moscow, in Russia.

NEW INCORPORATIONS.

THE Buffalo Rubber Manufacturing Co., July 17, under New York laws; capital, \$50,000, fully subscribed. E. L. Toy, formerly vice president of the Alden Rubber Co., is president, and A. J. Commins, former secretary of the Alden company, is secretary and treasurer. A desirable manufacturing plant has been acquired at Tonawanda and West avenues, Buffalo, New York. The same has been electrically equipped, and at last accounts the company hoped to have an attractive line of rubber specialties on the market by October 1.

=The Housatonic Rubber Co. (Bridgeport, Conn.), September 22, 1903; capital, \$4,000, in \$50 shares. Directors: Justin A. Wilson (president), Phebe A. Wilson (secretary and treasurer), A. B. Beers. The corporation is formed to continue the rubber reclaiming business conducted by the late James A. Wilson as the Housatonic Rubber Co.

=Anchor Rubber Tire and Manufacturing Co., September 5, 1903, under New York laws; capital, \$125,000. Incorporators: A. C. Farnsworth and A. J. Farnsworth, New York city; Edward Ridgway and Joseph W. Elberson, Setauket, Long Island. The purpose of the company is to make solid rubber vehicle tires and insulated wire, at a Setauket factory with which Mr. Elberson has long been identified. Mr. Elberson will be general manager, and it is proposed to begin work early in this month.

=Harris Rubber Co., September 1, 1903, under New York laws, to manufacture rubber goods; capital, \$15,000. Incorporators: Benjamin Harris and Minnie Harris, No. 209 Sixth street, Hoboken, New Jersey; Max Cohen, New York city.

=The incorporation of the American Rubber Co., under New Jersey laws, with \$100,000 capital, was reported in THE INDIA RUBBER WORLD June 1, 1903 [page 320]. On June 29 the company filed a certificate at Trenton, changing its name to the Continental Rubber Co., and increasing the capital to \$1,000,000. One of the incorporators, Samuel R. Betts, of a legal firm at No. 120 Broadway, New York, informs THE INDIA RUBBER WORLD that the company are not yet prepared to make public any statement regarding their object or plans.

TRADE NEWS NOTES.

THE Fairfield (Connecticut) Rubber Co. have awarded a contract for the erection of an additional storage warehouse, to be of brick, 40 x 120 feet, with fireproof roofing.

=Four large new boilers have been installed in the power plant of the Fells factory of the Boston Rubber Shoe Co.

=The Alling Rubber Co. have enlarged their store at Bridgeport, Connecticut, by annexing an adjoining store, so that they now occupy Nos. 1125 to 1129 Main street. The store is divided into sections for different lines of goods, the bicycle tire department being spoken of as unusually extensive and complete. Ernest M. Jaycox is resident manager.

=The engine at the new rubber shoe factory of Terrence McCarty, at Bristol, Rhode Island, have been running for several days, and at last accounts it was expected that manufacturing would be begun shortly after the first of the month.

=The Yatman Rubber Co. (Newark, New Jersey), whose loss by fire was mentioned lately in these columns, inform THE INDIA RUBBER WORLD that they have succeeded in getting their insurance adjusted and have resumed manufacturing at the same premises, Nos. 224-228 High street.

=The Fawkes Rubber Co. (Denver, Colorado) have opened a branch office at No. 1679 Broadway, New York, for the sale of their new vehicle and bicycle tire, which was described in THE INDIA RUBBER WORLD for July 1, 1903. The office will be in charge of Basil S. Courtney, as manager of sales for the company—a gentleman of several years experience in the tire selling trade, he having been until recently with the New York Belting and Packing Co., Limited.

=The twenty-nine salesmen of the Chicago Rubber Shoe Co., on August 29, the last day of their summer vacation, were delightfully entertained at the summer home of the president of the company, Mr. E. G. Stearns, at Lake Geneva, a few hours out of Chicago. Seven states are covered by the firm's traveling staff.

=Theodore Hofeller & Co. (Buffalo, New York) are distributing to the trade a neat folder illustrating the expansion of their trade in old rubber, in which line they now claim the largest business in the world. A view is given of their present large premises, in comparison with their original plant, in 1881. The title of this folder is characteristic of the spirit which pervades the business of the establishment: "Expansion Thro' Mutual Good Will."

=The factory of the Goodyear's Metallic Rubber Shoe Co. [Wales-Goodyear], at Naugatuck, was closed for a few days early in the month on account of an accident to the engine.

=Henry L. Hotchkiss, of L. Candee & Co. (New Haven, Conn.), has been elected president of the Glenark Knitting Co., of Woonsocket, R. I. The board of directors includes also Colonel Harry E. Converse, of the Boston Rubber Shoe Co., and John J. Banigan, formerly of the rubber trade.

=In the Labor Day parade in Boston a feature was a float showing a bevy of pretty girls, employes of the Hood Rubber Co., displaying a banner inscribed "Patronize Union Labor." There were in the parade 150 men belonging to the Rubber Workers' Union, and 150 female employes.

=The firm of Gibson-King Rubber Co. (No. 206 Broadway, New York), the formation of which was mentioned in THE INDIA RUBBER WORLD of August 1, was dissolved on September 14 by mutual consent. A. Rasines, of the same address, has been appointed trustee in liquidation.

=The blowing out of a boiler tube at the factory of the Joseph Banigan Rubber Co., scattered coals from the grate around the boiler room, setting fire to the woodwork. An alarm was sounded and the Providence fire department put out the flames before much damage was done.

=The strike in the rubber shoe factory of L. Candee & Co. (New Haven, Connecticut), mentioned in our last issue, came to an end about the middle of the month. It resulted from the introduction of a new line of shoes and the fear of the employes concerned that, with the required number of pairs per day, they could not earn their accustomed wages. The strike began during the vacation of Superintendent Pearce, who, on his return, called the striking girls together in the work rooms, where they found ice cream and cake served—something which has served as a basis for comment in very many newspapers, as introducing a new idea in dealing with labor troubles. During the strike a number of the girls involved secured employment at the Beacon Falls rubber shoe factory, where they are still at work. A rubber workers union has been organized at New Haven, as one result of the strike.

=E. Bers & Co. (Nos. 22-24 South Delaware avenue, Philadelphia) report that they carry in stock about 500,000 pounds of various grades of scrap rubber, and are at all times in a position to fill orders promptly. Orders are in many instances executed on the day of receipt. The firm have also a house at No. 10½ Desbrosses street, New York.

=The Calumet Tire Rubber Co. (Chicago) have been especially busy of late, chiefly on solid tires, though they are doing a good business also in horseshoe pads. They are preparing to introduce a new line of solid tires, but are not yet ready to put out samples.

=The Camp Rubber Co. (Akon and Ashland, Ohio) have filed with the secretary of state of Ohio a certificate of increase of capital from \$50,000 to \$150,000.

=The regular quarterly dividend of \$2 per share on the capital of the Boston Belting Co. is due on October 1 to stockholders of record of September 15.

=The Bishop Gutta-Percha Co. have purchased a plot of ground, 50×98.9 feet, adjoining their premises on the south side of East Twenty-fifth street, New York.

=The Duckwall-Harman Rubber and Supply Co. (Indianapolis, Indiana) announce an increase in their capital from \$10,000 to \$15,000. The business of the company dates from April, 1899. The company are selling agents in their territory for the Gutta-Percha and Rubber Manufacturing Co.—being supplied from the Chicago branch—and also for leading manufacturers in various lines of supplies.

=The Rubber Sole Leather Shoe Co. (South Framingham, Mass.) are stated to have entered into a contract for the manufacture of their shoes by J. W. Russ & Co., of Haverhill, Mass.

=The Goodyear Tire and Rubber Co. (Akron, Ohio) are mentioned as having purchased a touring car for use in testing automobile tires—a three cylinder 30 HP. machine, with 34 inch wheels and a speed capacity up to 50 miles an hour.

=After twenty-four years spent in the rubber business in Cleveland and in Boston, Mr. Alfred L. Lindsey, president of the Stoughton Rubber Co., Boston, severs his connection with rubber and goes into coffee and tea, the new position being sales manager for the Chicago house of the well known firm of Chase & Sanborn. For ten years past Mr. Lindsey has been an active factor in the mackintosh business in Boston and has left a record as a hard, successful, and conscientious worker. The New York management of the Stoughton Rubber Co. part with Mr. Lindsey with the greatest regret and as an indication of their appreciation of his services presented him with an elegant complete silver service. The good wishes of the whole trade will go with Mr. Lindsey.

=Few perhaps, even in the rubber footwear trade, appreciate the remarkable growth of the business of the Mishawaka Woolen Manufacturing Co. In the last six years business has increased seven fold, the sales last year amounting to over \$4,000,000. To take care of this business the building of additions has gone on almost continuously. At the present time foundations are being put in for a storehouse for crude stock and for manufactured goods. This house will be 150×280 feet five stories, of brick, and connected with the main factory by bridges.

PERSONAL NOTES.

THE Rev. Dr. Edwin S. Lines, who has been chosen bishop of the Episcopal diocese of Newark (New Jersey), is the subject of a sketch in *Leslie's Weekly* (New York), which states he is a native of Naugatuck, Connecticut, where, in his early years, he worked in a rubber factory to earn money to help pay his way through Cheshire Academy. He was graduated from Yale in 1872, and after studying for the ministry and accepting a small-

er pastorate, he became rector of St. Paul's Church, in New Haven, which position he has held until now.

=Colonel Samuel Pomeroy Colt, president of the United States Rubber Co., and Mr. William R. Dupee, president of the American Rubber Co. (Boston) were at Aix-les-Bains during August, returning at the end of the month to Paris, where Mr. Russell Colt, son of Colonel Colt, left the party to return to his studies at Yale University. Colonel Colt arrived at home late in September.

=George S. Andrus, general manager of the La Crosse Rubber Mills Co. (La Crosse, Wis.), after an absence of two months from active business with an attack of appendicitis, is again at the helm, and pushing things with his old time vigor.

=Mr. B. T. Morrison, general manager of the Reading (Mass.) Rubber Manufacturing Co., accompanied by Mrs. Morrison, has been making a tour of Europe.

=Mr. E. D. Hewins (Boston), well known to the New England rubber trade as an enterprising cloth merchant, has lodged with the Interstate Railway Commission, a complaint regarding the practice of the New York, New Haven and Hartford railroad of charging as much for a parlor car seat for a short distance, as it does from Boston to New York.

=Mr. and Mrs. Charles Varnum Perry, of Bristol, Rhode Island, celebrated their silver wedding on September 17. Mrs. Perry was Mary Isabel Trotter, daughter of the late Andrew Ramsay Trotter, who was treasurer of the National India Rubber Co. for a long time.

THE FIGURES THAT GOT MIXED.

IN a late issue *The Boot and Shoe Recorder* (Boston) observed:

THE INDIA RUBBER WORLD is noted for the exactness of its statements. Editor Pearson never prints any item of news without first verifying it. Therefore we are pleased to learn, on the authority of THE INDIA RUBBER WORLD of September 1, that the Boston Rubber Shoe Co., in its two factories, has a capacity of 332,000 pairs of boots and shoes daily. We haven't time just now to compute what the yearly production would be if they run at that full capacity every day except holidays, but we congratulate the Boston Rubber Shoe Co. on their ability to sell all the goods which they can manufacture.

The mistake occurred in the simplest manner imaginable. Editor Pearson was engaged in solving two problems at once: (1) the daily ticket of the Boston Rubber Shoe Co. and (2) the number of times Editor Putnam had announced in the columns of the *Recorder* the fact that "Lester Leland is in New York this week." The first was intended as an item for THE INDIA RUBBER WORLD and figured 55,333 pairs, and the second to be used as a cure for insomnia and totaled 332,000 insertions. The totals were transposed in the editorial mind. That's all.

WELLINGTON MACKENZIE, No. 48 Yorkville avenue, Toronto has filed a claim for a deposit of asbestos on the shore of Lake Temiscaming, about two miles from New Liskeard, on the Ontario side of the lake—the first to be discovered in Ontario. Mr. MacKenzie informs THE INDIA RUBBER WORLD that the material is abundant and of very fine quality, the fiber being four inches long.

A TRADITIONAL nickname for Akron—one that has been in use for years—is disappearing. That name was "Tip-top city," having its origin partly in the fact of Akron's elevation, being probably the highest city in the state. The name which is taking its place is "Rubber city." Cigars, pencils, and many things in the way of advertising matter are being branded "Rubber city," and the Akron public are taking up the name with interest.

THE RUBBER TRADE AT AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The manufacturers of automobile tires have long felt that, as long as they furnish guarantees regarding quality and workmanship, there should be certain rules as to their application to various rims and different weights of vehicles. Not only will guaranteed tires under such rules give better service but they will in the long run drive out the cheap unguaranteed tires. The meeting of tire manufacturers in New York a few days ago was attended by representatives of several Akron concerns, who apparently believe that the result will be a better condition both for the manufacturers and the users of tires. Among the Akron men at the conference were Colonel George T. Perkins, president of The B. F. Goodrich Co.; F. A. Seiberling, manager of The Goodyear Tire and Rubber Co.; A. H. Marks, vice president of The Diamond Rubber Co.; and H. E. Raymond, general sales manager of the Goodrich company.

"The manufacturers of rubber tires," said an official of a local rubber company, "have long viewed with concern the tendency toward cheaper tires, and it has been felt for some time that eventually the manufacturers would have to get together on some such plan as has now been agreed upon. Automobile makers have used tires in many instances of too light construction for the weight of the machine, and both the manufacturer and the user have suffered in consequence. Naturally tire makers have to guarantee their tires, and it has been found that by reason of the carelessness in fitting light tires to heavy machines we have suffered, while the users have not been satisfied. Tires have been fitted to rims that were not at all suitable, and the conditions in a number of particulars have not been such as to give satisfaction. Together with this state of affairs has come the tendency toward making cheap tires. Automobile makers have tried to get them as cheaply as possible, from motives of economy, and have thus created a demand for a grade of tires which has been very unsatisfactory. Had this tendency died out, there would have been no reason for an agreement among the manufacturers, but it has been growing worse, and we were confronted with a serious problem which could be successfully solved only by an agreement to make automobile makers conform to certain conditions which were determined upon at our meeting last week. One of these conditions was that our guarantees on tires would not be binding unless the tires are fitted to certain rims approved by us, and that only tires of certain weights shall be used on machines of certain weights. We hope by this method to be able to produce a grade of tires which will give the user better satisfaction. It is to be a fight between quality and price, and we expect quality to win."

The tire makers are of the opinion that the agreement entered into will be the means of making conditions better all round. No man wants to buy a tire unless it is guaranteed, and this fact, it is calculated, will cause the makers of automobiles to be more careful in the selection and fitting of tires to their machines. A scale of sizes for "axle weights" has been adopted, this term being used by automobile makers to indicate the burden borne by each axle, which is approximately half the car, though not uniformly so. By making the schedule according to "axle weights," the tire agreement permits tires of different sizes to be used on front and rear wheels of the same automobile.

A certain group of rim makers have agreed to make their rims exactly according to specifications furnished by the tire makers and to allow the tire men to keep inspectors in the rim factories to mark O. K. all rims approved. Tires not on rims

so marked and on any cars not in accordance with the weight schedule have not the makers' guarantee. This is a check calculated to keep the automobile men in line, for no man wants to buy tires not guaranteed.

Regarding prices a prominent tire man says: "Any tire maker can furnish tires at any price demanded. We have done this, and the result has been great dissatisfaction. Now we are going to determine for ourselves what grades to make and fix our own prices, and the vehicle people can take them or leave them. Buyers of automobiles will be willing enough to pay more for tires if they give better service."

The tire makers have withdrawn all former quotations on tires, calling attention in their circulars to the increased cost of rubber and of Sea-Island fabric.

* * *

WHEN the tire season of 1903 is over it will be found to have been the best in the history of the trade. Early in the season the rubber manufacturers here foresaw that the trade this year would be a large one, and made extensive preparations to take care of it. As a result they have been able to turn out large numbers of tires, and to keep abreast of the demand. The experience of the Firestone Tire and Rubber Co. is only one of the many which might be cited. When this company was organized it was the intention to have its tires manufactured by other companies. After a brief experience of this sort it was found that the demand for tires was so great that the company was warranted in erecting a plant. Since the plant was placed in operation it has not been idle a day, and it is the largest plant in the world devoted entirely to the manufacture of solid rubber tires. Other local companies which manufacture tires have been busy all season, some of them not being able to accumulate a stock. Local manufacturers have tried hard to keep up the standard of quality of their tires, in spite of demands for low priced goods, and jobbers are beginning to realize that the cheap tire is not the one to push. The demand for heavy tires for trucks, fire engines, and other heavy vehicles has been brisk and some of the local factories have enjoyed a good business in this line. The demand for bicycle tires has not been as large as in former years, but still the trade has been active enough to keep the machines in local plants pretty busy.

The bicycle tire contracts will open with October and present activity in the market make it evident that the coming season will be a busy one, probably surpassing the present season. An active campaign is also promised in the garden hose business. Contracts will be let during the next two months, and from present indications great activity in this trade is anticipated.

* * *

ARRANGEMENTS are being made by local manufacturers for the big automobile shows, and they will show some first class goods, heavier in proportion to the weight of the machines than ever before. The detachable or clincher tire has apparently almost supplanted the single tube tire, and well posted tire men are of the opinion that the coming shows will demonstrate this fact. The B. F. Goodrich Co., the Diamond Rubber Co., and the Firestone company will have exhibits at all the principal shows.

Local tire manufacturers will probably fight shy of the carriage and automobile shows which are not promoted by some recognized association. In the past it has been customary for them to allow themselves to be "held up" for large sums for space in which to make a display of their goods, at almost any show. Many of these shows have been promoted by private individuals for the money there is in it, and the Akron manufacturers cannot see where they can make the displays they have been in the habit of doing with advantage to

themselves. They have had to pay heavily for permission to display their goods, and they do not believe the advertising has been sufficient to warrant them to make the expenditure. Of course they will have men on the grounds looking for business, but the large displays they have made heretofore will be lacking. This has been practically decided upon in connection with the shows operated for private gain, and what action will be taken in regard to the legitimate carriage and automobile shows in this respect is problematical. According to the opinion of a man well known in the rubber tire trade, this action may be the beginning of a movement among local tire makers to "cut out" displays of this nature altogether.

* * *

THE annual meeting of the Whitman & Barnes Manufacturing Co. was held in this city on September 3. The election resulted in but one change in the officials, Hon. George W. Crouse retiring from the directorate in favor of J. A. Vining, of Akron. Reports from the officers showed that the business, particularly in the rubber department, had been very good during the past year, a dividend of \$1 per share being ordered, payable October 1. Mr. Vining, who succeeded Mr. Crouse, will have charge of the manufacturing interests in both Akron and Chicago. The officers are: *C. E. Sheldon*, Akron, president; *George E. Dana*, Syracuse, chairman; *William W. Cox*, St. Catharines, Ontario, vice president; *William Stone*, Chicago, treasurer; *C. E. Caskey*, Chicago, assistant treasurer; *James Barnes*, Syracuse, N. Y., secretary; Hon. *Frank Hiskok*, Syracuse, general counsel. The directors are: Messrs *Sheldon*, *Dana*, *Cox*, and *Hiskok*—named above—and *I. C. Alden*, *W. H. Gifford*, *George C. Kohler*, *C. I. Bruner*, and *J. A. Vining*.

* * *

THE article in the August number of THE INDIA RUBBER WORLD on fires in rubber factories was of interest here, where the big rubber companies have taken exhaustive measures to be prepared in the event of a fire. Perhaps there is no other rubber factory in the country better equipped for fire protection than that of The B. F. Goodrich Co. This company have a well drilled fire department of their own, equipped with every convenience for fighting fire, and besides their plant is within a minute's run of No. 4 engine house. Within the factory the company have a fire alarm system connected with this house which communicates to the firemen the exact spot where a fire is located, so that no time is lost in getting to it. Fires, however, are a very rare occurrence at this plant, owing to the care which is exercised in handling chemicals, etc. Some other rubber factories here are also well equipped with fire fighting apparatus.

* * *

IT is understood that at the annual meeting of The Diamond Rubber Co. in October plans for the construction of a handsome new office building will be decided upon, and contracts let as soon as possible thereafter. Need of an office building has long been felt by this company, but for the past two or three years they have been so busy erecting buildings in connection with their plant that the office building has been lost sight of. It is said that the reports to be presented at the annual meeting will show that this year has been the most successful in the history of the company. Rumor also has it that The B. F. Goodrich Co. have found their new addition insufficient to accommodate their growing trade, and that they will also erect an addition next spring.

* * *

WORKMEN are busily engaged in installing machinery in the plant of the Superior Rubber and Manufacturing Co. at Cuyahoga Falls, and it will be only a short time until the plant is ready for operation. The company was organized over a year ago, and about the middle of August was reorganized, at which time final arrangements were made for equipping the plant. The company will manufacture dipped goods, employing about 50 people at first. Mayor E. M. Young of Cuyahoga Falls, was one of the promoters of the new company, and it was through his efforts that it located in Cuyahoga Falls instead of Akron, as at first intended. The officers now are: *W. J. Bailey*, Cleveland, president; *W. J. Hart*, Cleveland, vice president; *E. M. Young*, secretary and treasurer; *E. J. Ellis*, general manager.

Mr. H. B. Camp, president of the Faultless and Camp rubber companies, had a narrow escape from death on August 31. He was experimenting with natural gas in one of the kilns at the plant of The L. W. Camp Co., of this city, in which he is interested. A defective valve allowed the kiln to be filled with gas, and when Mr. Camp applied a match to the burner under the kiln there was an explosion which demolished the kiln, knocked three or four workmen down, buried one man under a pile of bricks, and threw Mr. Camp backwards against a brick wall. Fortunately he was not injured beyond a few bruises, but the damage to the plant was considerable.

The Ashland Rubber Co., recently promoted by Mr. Frank Ward of Barberton, has passed into the hands of Ashland people. Mr. Ward, who has been general manager and secretary, and Walter Leatherow, superintendent, have resigned. Mr. A. V. Snyder, who was formerly connected with The B. F. Goodrich Co., is understood to be slated to succeed Mr. Ward. By the change of the management, it is claimed that money will be saved, and that it will not injure the business in any way.

Reports from Ashland indicate that the Camp Rubber Co. are doing the biggest business in their history, and that their trade in the line of articles manufactured by them is constantly on the increase. The company have just installed a new 250 HP. engine, the increased business of the company making this move necessary.

Every little while there is a rumor to the effect that the plant of the People's Hard Rubber Co. here will be leased by some company interested in the manufacture of automobiles. The latest rumor was that the Peerless Motor Works of Cleveland would be removed to Akron and would occupy the plant, but so far it has been impossible to secure a confirmation of the rumor.

Mr. Don O. Allen, manager of the tire department of the Diamond Rubber Co., and Miss Blanche Hale, daughter of Mr. and Mrs. O. W. Hale, of Akron, were married on the evening of September 9, the ceremony being performed by the Rev. D. T. Thomas, of Youngstown. Mr. and Mrs. Allen will reside at No. 23 Hawthorne avenue, Akron.—Mr. Frank Richardson Peabody, manager of the reclaiming plant of the Diamond Rubber Co., and Miss Ethel Webb Wright, daughter of Dr. and Mrs. S. J. Wright, of Akron, were married on September 17, the ceremony being performed by the Rev. Howard S. MacAyene, of Akron.

James W. Hoffert, assignee of the People's Hard Rubber Co., has been ordered by Probate Judge Pardee to proceed at once to offer the claims of the company to the highest bidder.

The suit of the Goodyear Tire and Rubber Co. against the Consolidated Rubber Tire Co. has been transferred to the United States district court for northern Ohio.

Goodrich tires were used by Charles J. Glidden, of Lowell, Massachusetts, in his automobile trip beyond the Arctic circle, and Diamond tires were used in the trans-continental trip of L. T. Whitman and E. T. Hammond in their 850-pound Oldsmobile.

TIRES AT THE BOSTON CARRIAGE SHOW.

BY A RESIDENT CORRESPONDENT.

FOR a city far removed from the great carriage centers of the country, the thirty-first annual convention of the Carriage Builders' National Association, held at Mechanics Building, Boston, September 21-27, was a big success. While not as large by any means as the conventions of New York, Philadelphia, and perhaps other places, yet there was a very large and varied display of the products of the manufacturers.

The rubber trade was well represented in the exhibition held in connection with the convention, showing tires and other rubber goods for vehicles of all kinds. According to one authority, generally speaking, few contracts were made by the manufacturers of tires, in view of the contemplated pooling of issues of all the large manufacturers for an increase in prices. Rubber men say that the general attendance at the show far exceeded their expectations. Prominent carriage manufacturers from all parts of the country were present, the visitors numbering about 3000.

The Firestone Tire and Rubber Co. (Akron, Ohio) had a good exhibit of high grade rubber tires for carriages and automobiles. The special feature was the company's sidewire tire for heavy autos, fire apparatus, etc. The claim is made that 90 per cent. of the motor cars in commercial use in Boston are equipped with the Firestone tire. The display was in charge of A. J. Greene, Boston manager; H. S. Firestone, general manager of the company; William Wells, New York salesman; J. M. Gilbert, general salesman; and R. J. Firestone, Chicago manager.

The Diamond Rubber Co. (Akron, Ohio) displayed rubber tires ranging from a baby carriage to heavy autos, and also goods in the mechanical rubber line. Solid, cushion, and pneumatic tires were shown, and a new feature was the Diamond detachable "1904" auto tire, which is stated to be 50 per cent. heavier than formerly. O. S. Tweedy, Chicago, was in charge, assisted by J. R. Van Dusen, of New York, and W. P. Cronin, W. T. Helfer, and J. S. Wardell, Boston.

The India Rubber Co., of New Brunswick, New Jersey, formerly of Akron, Ohio, exhibited cushion tires, two wire carriage tires, pneumatic bicycle tires and the Wheeler endless solid motor tire. R. A. Brine and Frederick W. Dogherty were in charge.

The Sweet Tire and Rubber Co. (Batavia, New York) made a specialty of rubber tires, a new single cushion tire in particular. A. W. Caney, vice president, and George E. Perrin, treasurer, were in charge.

The largest and most varied exhibit was that of the Good-year Tire and Rubber Co., Akron, Ohio. A fine display of solid rubber, cushion, and pneumatic carriage tires, and also rubber sundries, was made. The new goods shown were a flat tread auto tire and an endless solid rubber tire for delivery wagons, pleasure cars, fire apparatus, and the like. A curiosity was shown in the shape of a fire wheel 56 inches in height, the average being about 45 inches, and equipped with a solid rubber tire. A new tire machine was also on exhibition. G. M. Stadelman, manager of the vehicle tire department, was in charge.

The Fawkes Rubber Co. (Denver, Colorado) made its first exhibit of the Fawkes indestructible airless rubber tire for all classes of vehicles and bikes. It is claimed for the airless tire that it possesses all the good qualities of the pneumatic tire, but is more lasting and cannot rim-cut or creep, as the tire is elastic and hugs the rim closely. B. F. Courtney and L. F. Stillwell were in charge.

The Hartford Rubber Works Co. (Hartford, Conn.), while showing all styles of rubber tires, made a specialty of solid rubber tires of a high grade. Mechanical rubber goods were also shown and a tire mounting machine. Manager E. R. Benson, of Boston, was in charge.

The B. F. Goodrich Co., Akron, Ohio, exhibited under the direction of its New England agents—C. S. Mersick & Co., Frank W. Tucker, manager—a varied line of solid, endless, side wire, two wire, single tube, clincher, and pneumatic tires.

The Kelly-Springfield tire was exhibited by the Consolidated Rubber Tire Co. (New York and Akron, Ohio). The concern claims to have made the first rubber tires and the first to apply the two-wire idea. Stanley F. Hall was in charge.

Other tire exhibitors were Morgan & Wright (Chicago), The Stein Double Cushion Tire Co. (Akron, Ohio), the Milwaukee Rubber Works Co. (Milwaukee, Wis.), Alden Rubber Co. (Akron, Ohio), International Rubber Manufacturing Co. (New York), International A. and V. Tire Co. (Milltown, N. J.), Victor Rubber Tire Co. (Springfield, Ohio), and the Empire Rubber Manufacturing Co. (Trenton, N. J.).

The Monarch Carriage Goods Co. (Cincinnati) made quite an extensive display of buggy boots, storm aprons, and hardware goods, in the construction of which rubber is used to more or less extent. Storm aprons, entirely of rubber, were shown, and also a deck-panel boot on which rubbers are used for holding the boot down, rubbers having been found more desirable than wire springs. Charles Weiclein had charge.

A very good line of rubber carriage cloth was exhibited by The Eureka Rubber Manufacturing Co. of Trenton, N. J. The company claims a daily capacity of 5000 yards at its new factory, with a contemplated increased capacity next year.

In the rubber line, the Morgan Potter Co., Fishkill-on-Hudson, N. Y., exhibited rubber shoes for brake blocks.

NEW TRADE PUBLICATIONS.

THE SUPERIOR RUBBER TYPE CO. (Chicago) issue their Catalogue No. 18, devoted to a great variety of appliances for use in connection with rubber type, including printing presses, mounts for stamps, hand and dating stamps, and the like, besides which 30 pages are devoted to the different faces of type kept in stock. Wholesale prices are given. The catalogue is liberally illustrated, and is the most complete catalogue in this line that has come to our notice. [6 $\frac{7}{8}$ " \times 9 $\frac{3}{4}$ ". 128 pages.]

THE OHIO RUBBER CO. (Cleveland and Cincinnati) have sent out a handsome catalogue of Stormproof Clothing to their trade in Ohio, Michigan, Indiana, Kentucky, Tennessee, West Virginia, Pennsylvania, and New York state. The company's stock is large and varied, and they are understood to be doing an excellent business. They assert: "The demand for all kinds of waterproof clothing has never been so universal as now." This catalogue has won the most complimentary mention from journals devoted to artistic advertising—for instance, from *Profitable Advertising*, of Boston. [4" \times 9 $\frac{1}{4}$ ". 16 pages.]—A net pricelist to dealers accompanies the catalogue.

MULCONROY CO., INC. (Nos. 1213-1215 Market street, Philadelphia) issue their net trade catalogue No. 16, devoted to Waterproof Clothing for Man and Horse—"Liberty" brand. It is liberally illustrated, gives prices and an adequate description of the goods listed, besides which there is a department devoted to Oiled Clothing. [3 $\frac{5}{8}$ " \times 5 $\frac{7}{8}$ ". 24 pages.]

SWEET TIRE AND RUBBER CO. (Batavia, New York) have issued a descriptive list of Sweet's Patent Rubber Tires. [6" \times 3 $\frac{5}{8}$ ". 11 pages.]

THE TEXTILE GOODS MARKET.

OCTOBER finds the textile goods market, as related to the rubber trade, in a somewhat waiting attitude. At this time last year most of the rubber manufacturers had made their arrangements for cotton duck covering the entire twelve months, and both the seller and buyer knew where they stood. The market for raw material at that time was steady, the manipulators in the Cotton Exchange had not commenced their operations, and the prospective dearth of the staple had not dawned upon the market. Consumers who were averse to covering their requirements for the year at a stipulated figure saw no impediment to their going ahead on the principle of buying their ducks and sheetings as their needs dictated, although it was made very plain later in the season that they had made a mistake, and a costly one, for they could have contracted for all the fabric they needed for the year at 17½ cents per pound, whereas they have been paying at intervals from 20 to 24 cents. It is a reasonable deduction that those who contracted for the year realized greater profits upon their rubber goods than did those who paid the higher price for cotton goods.

Considering the status of the market for cloth, it is hardly necessary to state that rubber manufacturers who covered their requirements for the year have taken up to the maximum of their contracts. Few of them dreamed that they would require so much duck to carry them through the year, but there was nothing to be lost in making the outside limit of their takings large enough to meet any emergency, and that it was a very wise move on the part of the rubber people is shown by the fact that they have not only called for every pound of duck that was coming to them, but in some instances their requisitions have been from a dozen to a hundred bales in excess of what was due. The business acumen of these manufacturers is to be commended, but it failed in its purpose, for the duck mills charged up the extra supply on the basis of 22 cents, instead of allowing it to go in with the amount called for in the contract at 17½ cents. The duck people claimed that they were already losing too much money by making 17½ cent duck out of 13½ cent cotton. So much for the season just closing.

In regard to business for the coming year both the rubber manufacturers and cotton goods people are all at sea. The unsettled condition of the staple market has made it next to impossible for them to get together on the price question. Both factions are agreed that cotton is to rule higher, but how much higher is the question. The mills are now paying 13½ cents for cotton, and are selling duck on the basis of 22 cents for regular, and 24 cents for some special yarn goods. Rubber manufacturers are not willing to renew contracts on this basis, and the duck mills are unprepared to come to a settlement on a lower level. New business is therefore at a standstill. Of course the rubber mills have sufficient duck to carry them along for awhile, but in the meantime there is some close figuring going on between buyers and sellers. It is safe to say that scarcely a contract for the coming year has been put through yet, and when anything will be done in this direction depends entirely upon how soon the cotton market settles down. Colonel Henry G. Hester, secretary of the New Orleans Cotton Exchange, gives the total visible supply as 1,132,623 bales against 1,766,667 last year. There is very little reason to believe that the cotton duck mills will be able to cover their requirements for the next year with cotton at less than 10½ or perhaps 11 cents against 8½ and 9 cents last year. During the past week there have been many representatives of rubber manufacturers in the market, endeavoring to get some idea as

to outlook for the next season, but they have been disappointed. Emissaries of the duck sellers are also visiting the rubber people for a like purpose, and both factions are patiently endeavoring to reach an understanding. This is very necessary, for the market for rubber goods is permeated with activity, and the consumption of goods for the next season will doubtless be heavy.

Following are the prices of cotton middling uplands spots at the ports of New York, New Orleans, and Liverpool on the dates given:

	New York.	New Orleans.	Liverpool.
September 5	12½ cents	11½ cents	6.40d.
September 12	12 cents	10½ cents	6.52d.
September 19	11¾ cents	10⅞ cents	6.48d.
September 26	11¼ cents	9⅞ cents	6.66d.

The market for cotton sheetings is affected in a similar way, although as a rule, this class of fabrics are bought more on the hand to mouth principle, by the manufacturers of rubber footwear. During the past month there has been rather a quiet demand, consumers preferring not to cover their needs any farther than actually necessary, on account of the firmness of the market. The mills are not in possession of large stocks of sheetings, and the outlook is for higher priced goods for the coming season. As will be seen by the subjoined table, some tickets have changed in price, influenced by higher priced cotton. Sellers, however, have impressed upon buyers the fact that the prices at which ducks and sheetings are now being sold must not act as a factor when it comes to renewing contracts for the next season.

Felt mills throughout the country have had a fair demand for goods, although prices have been firm at a higher level than formerly, owing to the statistical position of the wool market. The advance in the price of all classes of raw textiles will cause prices on finished goods of every description to seek a higher level.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

	Pack.	Yds. to Lb.	
36" Household Favorite, 56x60.	4.00	.....	5¼ cents.
40" Household Favorite, 56x60.	3.60	.....	5¼ cents.
36" Henrietta, L. L., 48x52.	4.00	.....	5 cents.
39" Henrietta, 68x72.	4.75	..... (net)	5 cents.
38½" Henrietta, 64x64.	5.15	.....	4½ cents.
40" Henrietta, 48x40.	2.85	..... (part waste)	6¼ cents.
36" Florence C., 44x44.	6.15	.....	4 cents.
36" American L., 64x64.	5.00	..... (net)	4¾ cents.
40" Majestic C. C., 48x48.	2.50	.....	7½ cents.
40" Majestic B. B., do	2.70	.....	6½ cents.
40" Majestic B. B., do	2.85	.....	6½ cents.
40" Elcaney, do	3.60	.....	5¾ cents.
36" India, do	3.00	.....	5¾ cents.

Sheetings.			
40" Hightgate...	5¼c.	40" Selkirk...	7½c.
40" Hightown...	6 c.	40" Selwe...	7½c.
40" Hobart...	6½c.	48" Mohawk...	10 c.
40" Kingstons...	7½c.	40" Marcus...	5½c.
39" Stonyhurst...	5¼c.	40" Mallory...	5 c.
39" Sorosis...	5 c.	36" Capstans...	4 c.
40" Seefeld...	8 c.	Osnaburgs.	
		40" Iroquois...	9 c.
		40" 10 oz. Carew...	11 c.
		40" 11 oz. Carita...	12 c.

A WRITER in the daily press from Brisbane, Australia, mentions casually the wonderful gum cement that the natives know how to make, and which they use in fastening their shields together. Will some Australian reader give further light concerning this, particularly if it is a rubber cement?

FILLER FOR AUTO TIRES.—A well known automobilist claims that the following filler for tires acts as an anti-leak substance very successfully in cases of ordinary puncture: Glycerine, 92 parts; gluten, 8 parts. Heat the glycerine in water bath, add the gluten, and stir until thoroughly mixed.

SOME FACTS REGARDING LITHOPONE.

IN an article in the *Zeitschrift für angewandte Chemie* Dr. E. Kochs and Dr. F. Seyfert call attention to the fact that lithopone, the pigment so much employed in the manufacture of rubber goods and in the linoleum industry, is capable, by reason of its excellent covering power and cheapness, of proving a serious competitor to the expensive body colors. The manufacturers of lithopone at present guarantee a certain amount of zinc sulphide in the various grades (green, red, white, blue, or yellow seal), but the analyses carried out by the authors for a number of years have demonstrated that very few samples actually contained the percentage guaranteed. The authors, after reviewing the various modes of production of lithopone and also the manufacture of sulphopone, discuss the method of analyzing lithopone and give as a reason for the non observance of the warranty the fact that the entire percentage of zinc contained in the lithopone is not in the form of zinc sulphide, but that zinc salts soluble in acetic acid of 5 per cent. are likewise present. They occur therein, generally in the shape of zinc carbonate, up to 12 per cent., which is due to a defective mode of production.

For the purpose of separating the zinc sulphide from the other zinc salts, acetic acid of 5 per cent. should be used and it is necessary, besides, to determine the amount of sulphur contained in the lithopone for verification. The final conclusion arrived at by the authors is that 1 to 2 per cent. of zinc soluble in dilute acetic acid hardly has any influence upon the quality of the lithopone, but a larger percentage should not be coun-

tenanced by the buyer. Only fifteen of the samples received showing the guaranteed amount of zinc sulphide, it is within the buyer's interest to always have the merchandise analyzed. The dealers, in giving the guarantee, take it for granted that in the production all the zinc combines with the sulphur, while as a matter of fact this is not always the case, if the manufacturing process is imperfect. The duty, therefore, devolves upon the manufacturer to have the article analyzed so as to be sure that the merchandise actually contains the warranted amount of zinc sulphide. If the entire amount of zinc found is accepted as zinc sulphide almost all the lithopones conform to the guaranteed amount. For this reason the manufacturers are unwilling to accept analyses in which this is not done, losing sight of the fact that with a faulty mode of production the reaction between barium sulphide and zinc sulphate does not always take place in a perfect manner.

Moreover, attention is called to the fact that lithopone of good quality should not contain more than 0.2 to 0.3 per cent. of moisture. A lithopone holding in its composition more than 2 per cent. does not mix with oil as thoroughly as it ought. The paper closes with the advice to pay attention to a very careful taking of the samples; this is essential for the conformity of the analysis, but is still frequently lost sight of.

As lithopone is extensively employed in the rubber manufacture, as well as in the linoleum industry, the above information may also interest our readers, since frequently a higher percentage of zinc carbonate as well as an increased amount of moisture have a disturbing action.—*Gummi Zeitung*.

REVIEW OF THE CRUDE RUBBER MARKET.

AT the time of going to press with this issue crude rubber is selling at higher prices than at any time in the past history of the trade, with the single exception of a brief period in 1882, when the extreme price of \$1.20 per pound was reached. From present indications it is possible that, before these pages reach our readers, an equally high price may again be reached. The market was firm and with an upward tendency throughout September, but the most marked advance occurred immediately after the Antwerp sale, on the 17th, where all the grades offered brought much higher prices than the brokers' estimations.

The advance has given rise in some quarters to conjectures that speculative trading is the cause. Such reports are always rife at such a time, but they are not always verified by subsequent developments. It is exceedingly doubtful whether any influence in the trade could long hold the price of crude rubber at an unwarrantably high figure, and the risks attending an attempt to "corner" rubber—greater, perhaps, than in the case of any other commodity—are too great and too well understood to be attempted by a house expecting to be engaged permanently in the trade. A glance at the diagram on another page of this Journal will show that rubber prices never remain long at one level; advances are apt to be sudden, even when rising to a very high figure, and the decline is equally sudden and just as marked.

Even if control of the market could be gained by speculative traders, the length of time during which extreme prices can be maintained is never longer than a manufacturer, with a fair supply on hand, can afford to remain out of the market. THE INDIA RUBBER WORLD is assured by the management of one of the largest manufacturing concerns in the trade that all of

its factories can be operated for the next five months without the purchase of another pound of rubber, and an extreme advance has seldom been maintained for five months at a time. Of course all the manufacturers are not so well supplied, and there is always somebody forced to pay the highest current price, or forego business.

But to recur to speculation. To a certain extent all buying and selling is speculation. The question here is whether, in a period of short stocks, control of them has been obtained for the purpose of forcing consumers to buy at exorbitant prices. When Vianna got up his great rubber "corner" years ago, although he actually controlled most of the supply of Pará rubber, he was kept in a nervous state because small lots of rubber not under his control kept dribbling into the market at lower prices than he demanded, and every such sale, no matter how small, weakened his position. A similar experience awaits every effort to buy up all the rubber in sight with a view to making large profits at the expense of the manufacturer. Besides, the market is infinitely wider to-day than in Vianna's time, and the task of gaining control of all the sources of supply would be proportionately greater. After a "corner" has been effected it cannot last beyond the arrivals from a new crop; besides, it may collapse any day through a decline in prices from causes beyond the control of speculators, and impossible for them to foresee.

But high prices of a commodity due to short supplies at the moment is another thing. It is what happens when there is a coal "famine"; even cabbages cost the housekeeper more when the market gardener has had a poor season. It would be a strange thing now, in view of the undoubted small supplies of rubber, and the active consumption, if prices were not high.

As to how long present prices will prevail, one man's judgment is as good as another, and no prediction need be offered here.

Arrivals of the new crop at Pará since the beginning of the season have been encouraging in extent. The figures herewith [including Caucho] give details for three years past, except that the record for the month just closed is brought down only to the 28th:

	1901.	1902.	1903.
July	1260	1290	1280
August	1290	1370	1230
September	1940	1670	2075
Total, First quarter	4490	4330	4585
[a—To September 28, 1903.]			

Following is a statement of prices of Pará grades, one year ago, one month ago, and on September 30—the current date:

PARÁ.	Oct. 1, '02.	Aug. 29, '03.	Sep. 30.
Islands, fine, new.....	70@71	96@ 97	107@108
Islands, fine, old.....	72@73	100@101	112@113
Upriver, fine, new.....	74@75	99@100	110@111
Upriver, fine, old.....	77@78	101@102	112@113
Islands, coarse, new.....	45@46	59@60	68@ 69
Islands, coarse, old.....	@	@	@
Upriver, coarse, new.....	59@60	78@79	88@ 89
Upriver, coarse, old.....	@	@	@
Caucho (Peruvian) sheet.....	51@52	61@62	69@ 70
Caucho (Peruvian) ball.....	55@56	74@75	78@ 79

The market for other sorts in New York, in which there likewise is an advance to be noted this month, is as follows:

AFRICAN.		Ikelemba.....	93 @ 94
Sierra Leone, 1st quality 91	@ 92	Madagascar, pinky....	84 @ 85
Massai, red.....	91 @ 92	CENTRALS.	
Benguella.....	75 @ 76	Esmeralda, sausage....	76 @ 77
Cameroon ball.....	67 @ 68	Guayaquil, strip.....	66 @ 67
Gaboon flake.....	48 @ 49	Nicaragua, scrap.....	75 @ 76
Gaboon lump.....	50 @ 51	Panama, slab.....	56 @ 57
Niger paste.....	21 @ 22	Mexican, scrap.....	74 @ 75
Accra flake.....	20 @ 30	Mexican, siab.....	57 @ 58
Accra buttons.....	None here	Mangabeira, sheet.....	56 @ 57
Accra strips.....	None here	EAST INDIAN.	
Lopori ball, prime.....	92 @ 93	Assam.....	88 @ 89
Lopori strip, do.....	89 @ 90	Borneo.....	@

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	6\$400	Upriver, fine.....	7\$700
Islands, coarse.....	3\$400	Upriver, coarse.....	6\$000
Exchange, 12 $\frac{3}{8}$ d.			

Last Manáos advices:

Upriver, fine.....	7\$650/5\$550	Upriver, coarse.....	5\$550
Exchange, 12 $\frac{3}{8}$ d.			

NEW YORK RUBBER PRICES FOR AUGUST (NEW RUBBER).

	1903.	1902.	1901.
Upriver, fine.....	95@100	70@76	85@92
Upriver, coarse.....	75@ 79	56@61	61@68
Islands, fine.....	90@ 97	07@73	81@88
Islands, coarse.....	59@ 61	45@48	46@50
Cametá, coarse.....	58@ 61	46@48 $\frac{1}{2}$	50@51

In regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 58 William street, New York), advises us:

"During September there has been very little demand for paper, and almost entirely from out-of-town banks, rates being

from 6 @ 7 $\frac{1}{2}$ per cent. for the general average of rubber paper, 6 per cent. being rather exceptional. The outlook is for a firm money market for some time to come."

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.					
	Fine and Medium.	Coarse.	Total 1901.	Total 1902.	Total 1903.
Stocks, July 31.....	170	54 =	224	362	724
Arrivals, August.....	413	254 =	667	677	464
Aggregating.....	583	308 =	891	1039	1188
Deliveries, August.....	443	280 =	723	518	665
Stocks, August 31.....	140	28 =	168	221	523

PARÁ.			ENGLAND.		
	1903.	1902.	1901.	1902.	1903.
Stocks, July 31.....	135	40	215	975	1025
Arrivals, August.....	1110	1380	1190	475	1200
Aggregating.....	1245	1420	1405	1450	2225
Deliveries, August.....	1125	1323	1215	800	700
Stocks, August 31.....	120	97	190	650	1525

	1903.	1902.	1901.
World's supply, August 31.....	1737	2746	2238
Pará receipts, July 1 to August 31.....	2160	2367	2305
Pará receipts of Caucho, same dates.....	300	323	250
Afloat from Pará to United States, August 31.....	364	418	87
Afloat from Pará to Europe, August 31.....	435	468	458

Rubber Receipts at Manaos.

DURING August and the first two months of the crop season, for three years [courtesy of Messrs. Witt & Co.]:

FROM—	AUGUST.			JULY-AUGUST.		
	1903.	1902.	1901.	1903.	1902.	1901.
Rio Purús.....	294	324	316	457	497	560
Rio Madeira.....	240	283	258	492	546	552
Rio Juruá.....	—	1	42	2	4	60
Rio Javary—Iquitos.....	100	86	62	114	100	115
Rio Solimões.....	15	42	68	25	49	80
Rio Negro.....	3	4	8	15	21	15
Total.....	652	740	754	1105	1217	1382
Caucho.....	47	51	114	208	216	241
Total.....	699	791	868	1313	1433	1623

A CORRESPONDENT at Manáos writes [August 20]: "Everything points to a good rubber crop this year. The Acre troubles being practically settled, hopes are entertained of large shipments from that region, and from the upper Purús. A feature of the month is the number of boats going up river, especially to the Juruá, no less than five having been despatched or now loading for that river. There are, however, troubles brewing on the upper Juruá, the Peruvians having invaded that territory and taken possession of it, declaring it to be theirs. A federal regiment—the Thirty-third—is under orders to leave here for that region as soon as the rivers rise sufficiently to permit steamers to go there. Rubber prices are keeping up and business prospects are looking brighter. The service of the Manáos Harbour is improving, though the new works are progressing so slowly that fears are expressed that when the rush comes the company will find itself unable to handle all the traffic here. Politically the horizon is clear. Governor Nery has arranged that his brother, Colonel Constantino Nery, now a state senator, will succeed him in office. Mr. Alden's manager at Manáos, Frederick H. Sanford, has gone to Europe on a vacation, and the United States consular agency here, which was under his care, is now entrusted to his successor, Mr. Pell."

Antwerp.

AT the regular inscription on September 17 the quantity exposed, about 284 tons, of Congo sorts, found buyers. Prices paid show an increase on valuations made at the preceding monthly sale of 7 to 8 per cent., equal to an average

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots—in cents per pound; old shoes are a trifle higher; other items not changed [in cents per pound]:

Old Rubber Boots and Shoes—Domestic.....	6 $\frac{7}{8}$ @ 7
Do —Foreign.....	6 $\frac{1}{4}$ @ 6 $\frac{3}{8}$
Pneumatic Bicycle Tires.....	4 @ 4 $\frac{1}{8}$
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	9 $\frac{1}{4}$ @ 9 $\frac{1}{2}$
Heavy Black Rubber.....	4 $\frac{1}{4}$
Air Brake Hose.....	2 $\frac{7}{8}$ @ 3
Fire and Large Hose.....	2 $\frac{1}{2}$
Garden Hose.....	1 $\frac{1}{2}$
Matting.....	1

advance of 5 or 5½ cents per pound. Good qualities, such as Lopori, Lomami, and Uelé, reached very high prices. Some principal lots sold were [prices in francs]:

	Valuation.	Sold at.
38,250 kilos Upper Congo—Uelé.....	8.85	9 57½
6,268 " Upper Congo—Uelé.....	9.40	10.07½
15,611 " Upper Congo—Aruwimi.....	8.90	9.67½
13,788 " Upper Congo—Aruwimi.....	9.35	9.97½
7,944 " Lower Congo thimbles red.....	5.60	5 85
12,608 " Upper Congo—ordinary.....	9.55	10.02½
46,042 " Upper Congo—Mongalla.....	9.40	10.07½
7,995 " Upper Congo—Mongalla.....	9.50	10.07½
7,247 " Upper Congo—Equateur.....	9.30	10.12½
4,701 " Upper Congo—Isangi.....	9.	9.97½
5,129 " Upper Congo—Uelé.....	9.45	9 65
9,849 " Upper Congo—Lomami.....	9.50	10.17½
55,015 " Upper Congo—Lopori I.....	9.40	10.12½
24,978 " Upper Congo—Lopori II.....	8.25	10.22½
		8.77½

[10 francs per Kilo=87½ cents per Pound.]

The next large sale by tender will take place on October 25, when about 425 tons will be offered.

RUBBER ARRIVALS AT ANTWERP.

AUGUST 24.—By the *Albertville*, from the Congo:

Bunge & Co. (Société Générale Africaine) kilos	153,000
Do (Chemins de fer des Grand Lacs)	8,000
Do (Société Anversoise)	22,300
Do (Cie. du Kasai)	470
Do (Société Isangi)	52,000
Société A B I R.....	3,500
Société Equatoriale Congolais.....	37,400
Société Coloniale Anversoise.. (Belge du Haut Congo)	4,000
Do (Cie de Lomami)	15,000
Do (La Lulonga)	17,000
Société Commerciale and Agricole de l'Alima.....	6,000
Société Baniembé.....	4,800
Société Coloniale Anversoise..... (Süd Kamerun)	700
Do (Süd Kamerun)	3,000
Do (Süd Kamerun)	1,500

328,670

SEPT. 14, 1903.—By the *Anversville*, from the Congo:

Bunge & Co. (Société Générale Africaine) kilos	111,800
Do (Société Générale Africaine)	1,400
Do (Société Générale Africaine)	37,500
Comptoir Commercial Congolais.....	14,000
Société Coloniale Anversoise..... (Cie. de Lomami)	21,000
Ch. Dethier.....	1,400
Société Coloniale Anversoise..... (Cie. du Kasai)	17,000
Do (Süd Kamerun)	5,000
Th. Le Bruyne.....	5,400

214,500

ANTWERP RUBBER STATISTICS FOR AUGUST.

DETAILS.	1903.	1902.	1901.	1900.	1899.
Stocks, July 31. <i>kilos</i>	377,527	689,772	1,040,441	1,133,702	345,205
Arrivals, August. . .	347,062	321,102	286,816	495,188	209,604
Congo sorts.....	322,136	291,673	267,931	385,738	280,538
Other sorts.....	24,926	29,429	18,885	112,450	18,766
Aggregating... ..	724,589	1,010,964	1,327,257	1,631,890	644,809
Sales, August.....	404,603	254,563	642,902	575,766	244,377
Stocks, August 31.	319,986	756,401	684,355	1,056,124	400,432
Arrivals since Jan. 1	3,326,394	3,558,836	3,838,870	4,167,418	2,395,870
Congo sorts .. .	2,971,325	3,245,814	3,514,147	3,506,913	2,094,646
Other sorts .. .	355,069	293,022	324,723	660,505	301,224
Sales since Jan. 1 . .	3,664,513	3,217,144	3,768,464	3,403,285	2,258,778

Liverpool.

WILLIAM WRIGHT & Co. report [September 1]:

Fine Pará.—The market has been strong and active, and prices have advanced by about 3d. per pound. This has been brought about by the smallness of stocks, the small supplies at Pará, and a good demand principally from America—in other words, the advance has not been speculative, but is simply owing to the ordinary law of "supply and demand." Stocks are very small (especially in medium grades), and we anticipate a further advance next month.

EDMUND SCHLÜTER & Co. report Liverpool stocks:

	July 31.	Aug. 31.		July 31.	Aug. 31.
Pará—1st hands... 556	349 tons.		Peruvians.....	222	150 tons.
Fine..... 461	260 "		Africans.....	333	305 "
Medium..... 33	43 "		Mollendo.....	108	81 pkg.
Negroheads..... 62	46 "		Mangabeira.....	70	21 "
Pará—2d hands... 425	301 "		Pernambuco.....	53	45 "
Fine..... 387	246 "		Maniçoba.....	108	90 "
Medium..... 19	23 "		Ceará.....	—	— "
Negroheads..... 39	35 "		Assare.....	36	21 "
Total Pará.....	981	650 "			

London.

EDWARD TILL & Co. [September 1] report stocks:

	1903.	1902.	1901.
Pará sorts..... tons	—	—	—
Borneo.....	28	128	129
Assam and Rangoon.....	8	11	90
Other sorts.....	202	396	506
Total.....	238	535	725
Pará.....	650	1532	984
Other sorts.....	476	664	1027
Total, United Kingdom.....	1364	2731	2736
Total, August 1.....	1781	3053	2944
Total, July 1.....	2285	3595	3128
Total, June 1.....	2248	3687	3502
Total, May 1.....	2539	3788	3597

SEPTEMBER 18.—The activity in this market has been well sustained, and large sales have been made at advancing prices. The stock of first hand Bolivian and hard fine Pará has practically been all sold. Sales include fine hard Pará, very old, 4s. 6d. @ 4s. 7d.; new at 4s. 5¾d. @ 4s. 6d. Negroheads: Scrappy in good demand at dearer rates, with sales of Manáos at 3s. 5½d. @ 3s. 6d. Cametas, spot, 2s. 8½d. Peruvian very scarce—fine, 4s. 5½d.; fair ball, 3s. 5d. @ 3s. 5½d.; slab, 2s. 9d.; scrap, 3s. 6d. Mollendo, fine, 4s. 4d. Medium grades (Africans and Centrals) in active request; the small supply at to-day's auctions met a good demand, at dearer rates. Madagascar mixed pinky softish, 2s. 11¼d.; Majunga, 2s. 7d.; East Coast good clean niggers, 2s. 8½d.; Assam good clean red, 3s. 7½d.

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

September 1.—By the steamer *Bernard*, from Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total
Poel & Arnold.....	37,200	2,800	36,200	1,100=	77,300
United States Rubber Co.	34,600	3,600	9,300	....=	47,500
A. T. Morse & Co.....	1,100	....	45,400	....=	46,500
New York Commercial Co.	23,200	1,700	12,000	....=	36,900
William Wright & Co.....	....	....	33,500	....=	33,500
L. Hagenaers & Co.....	8,000	....	3,700	....=	11,700
Thomsen & Co.....	2,900	....	3,100	....=	6,000
Total.....	107,000	8,100	143,200	1,100=	259,400

September 10.—By the steamer *Maranhense*, from Manáos and Pará:

New York Commercial Co.	104,400	20,700	32,700	600=	158,400
William Wright & Co.....	47,900	4,400	95,200	600=	148,100
A. T. Morse & Co.....	18,900	300	73,800	300=	93,300
Poel & Arnold.....	42,100	4,700	9,000	3,100=	58,900
L. Hagenaers & Co.....	6,900	600	3,000	....=	10,500
Thomsen & Co.	3,600	300	3,500	....=	7,400
United States Rubber Co.	4,700	300	1,500	....=	6,500

Total..... 228,500 31,300 218,700 4,600= 483,100

September 22.—By the steamer *Cametense*, from Manáos and Pará:

Poel & Arnold	94,000	33,100	65,200	1,400=	193,700
A. T. Morse & Co.....	15,200	3,000	174,900	600=	193,700
United States Rubber Co.	58,200	9,700	61,300	....=	129,200
New York Commercial Co.	72,300	11,100	14,100	600=	98,100
William Wright & Co. . .	23,200	3,100	21,700	300=	48,300
L. Hagenaers & Co.	11,000	1,200	4,400	....=	16,600
Robinson & Tallman. . .	8,100	1,700	1,000	....=	10,800
Thomsen & Co.....	2,300	400	3,400	....=	6,100
G. Amsinck & Co.....	400	2,700	100	....=	3,300

Total..... 284,700 66,000 346,100 2,400= 699,700

[NOTE.—The steamer *Polyarph*, due at New York on October 3, has on board 135 tons of Rubber.]

PARA RUBBER VIA EUROPE.

	POUNDS.
AUG. 28.—By the <i>Carpathia</i> =Liverpool:	
Poel & Arnold (Fine).....	23,000
George A. Alden & Co. (Fine).....	3,000 26,000
AUG. 25.—By the <i>Althance</i> =Mollendo:	
New York Commercial Co. (Fine).....	11,500
SEPT. 1.—By the <i>Arabic</i> =Liverpool:	
Poel & Arnold (Fine).....	112,000
Poel & Arnold (Coarse).....	50,000
Otto Meyer (Fine).....	33,763 205,373
SEPT. 4.—By the <i>Germanic</i> =Liverpool:	
William Wright & Co. (Fine).....	31,000
Poel & Arnold (Coarse).....	6,000 37,000
SEPT. 5.—By the <i>St. Louis</i> =London:	
A. T. Morse & Co. (Coarse).....	56,000
SEPT. 9.—By the <i>Majestic</i> =Liverpool:	
Poel & Arnold (Fine).....	125,000
Otto Meyer (Fine).....	21,898
Otto Meyer (Coarse).....	22,418
George A. Alden & Co. (Fine).....	6,000 175,316
SEPT. 12.—By the <i>Campania</i> =Liverpool:	
George A. Alden & Co. (Fine).....	44,000
SEPT. 17.—By the <i>Oceanic</i> =Liverpool:	
Poel & Arnold (Fine).....	90,000
George A. Alden & Co. (Fine).....	33,000
William Wright & Co. (Fine).....	11,000
A. T. Morse & Co. (Coarse).....	11,500 145,500

OTHER ARRIVALS AT NEW YORK

CENTRALS.

	POUNDS.
AUG. 25.—By the <i>Alliance</i> =Colon:	
Hirzel, Feltman & Co.....	9,200
L. N. Chemedlin & Co.....	2,200
G. Amsinck & Co.....	2,400
Piza, Nephews & Co.....	1,900
Meyer Hecht.....	1,500
H. Marquardt & Co.....	1,000
Fidanque Bros. & Co.....	800
Eggers & Heinlein.....	700 19,500
AUG. 27.—By <i>Alleghany</i> =Greytown, etc.:	
G. Amsinck & Co.....	2,500
E. B. Strout.....	1,000
A. D. Strauss & Co.....	1,000
Andreas & Co.....	600
Lawrence Johnson & Co.....	500
Kunhardt & Co.....	800 5,900
AUG. 27.—By <i>El Sud</i> =New Orleans:	
A. T. Morse & Co.....	9,500
AUG. 29.—By the <i>Santiago</i> =Mexico:	
Fred. Probst & Co.....	3,500
Samuels & Cummings.....	800
L. N. Chemedlin & Co.....	700
American Trading Co.....	300
H. Marquardt & Co.....	200 5,500
AUG. 29.—By the <i>Carpathia</i> =Liverpool:	
Eggers & Heinlein.....	7,000
SEPT. 1.—By the <i>Alene</i> =Savanilla, etc.:	
Isaac Brandon & Bros.....	3,000
G. Amsinck & Co.....	2,000
J. H. Recknagel & Co.....	2,000
D. A. De Lima & Co.....	1,200
Lawrence Johnson & Co.....	1,000
Jimenez & Escobar.....	1,100
For Liverpool.....	13,500 23,800
SEPT. 1.—By the <i>Seguranca</i> =Colon:	
A. Santos & Co.....	11,800
Hirzel, Feltman & Co.....	5,600
Lawrence Johnson & Co.....	4,500
Roldan & Van Sickle.....	4,100
L. N. Chemedlin & Co.....	4,000
G. Amsinck & Co.....	2,700
Dumarest & Co.....	3,200
J. A. Pauli & Co.....	2,700
Isaac Brandon & Bros.....	1,300
Eggers & Heinlein.....	1,100
Livingstone & Co.....	800
Everett, Heaney & Co.....	700
Frame & Co.....	700
Meyer Hecht.....	400
R. G. Barthold.....	200 43,800
SEPT. 5.—By <i>El Dorado</i> =New Orleans:	
Manhattan Rubber Mfg. Co.....	1,500
SEPT. 8.—By the <i>Valencia</i> =Greytown, etc.:	
G. Amsinck & Co.....	2,000
Wolf & Penister.....	1,000
J. H. Recknagel & Co.....	700
D. A. De Lima & Co.....	300
For Manchester.....	1,000 5,000
SEPT. 8.—By the <i>Thespis</i> =Bahia:	
J. H. Rossback & Bros.....	19,000

CENTRALS—Continued.

SEPT. 8.—By the <i>Saratoga</i> =Colon:	
G. Amsinck & Co.....	7,100
Isaac Brandon & Bros.....	2,100
Meyer Hecht.....	1,000
Fidanque Bros. & Co.....	800
Silva, Busenius & Co.....	500
Mecke & Co.....	300 11,800
SEPT. 8.—By the <i>Vigilancia</i> =Mexico:	
H. Marquardt & Co.....	1,200
Fred. Probst & Co.....	1,000
American Trading Co.....	600
E. Steiger & Co.....	200 3,000
SEPT. 15.—By the <i>Proleus</i> =New Orleans:	
Manhattan Rubber Mfg. Co.....	10,000
A. T. Morse & Co.....	1,000 14,000
SEPT. 14.—By the <i>Allai</i> =Carthage etc.:	
J. Ferro.....	5,000
Roldan & Van Sickle.....	2,400
Isaac Kubie & Co.....	1,500
Lawrence Johnson & Co.....	1,300
D. A. De Lima & Co.....	500
Kunhardt & Co.....	500
United Fruit Co.....	500
G. Amsinck & Co.....	200
Jimenez & Escobar.....	200
D. Ridgely & Co.....	700 12,600
SEPT. 15.—By the <i>Yucatan</i> =Colon:	
Hirzel, Feltman & Co.....	44,700
American Trading Co.....	19,100
G. Amsinck & Co.....	7,000
Lawrence Johnson & Co.....	12,700
A. Santos & Co.....	6,000
Isaac Brandon & Bros.....	4,000
H. Marquardt & Co.....	2,900
W. Loaliza & Co.....	1,700
Jimenez & Escobar.....	1,200
Dumarest & Co.....	1,300
Meyer Hecht.....	1,300
Fidanque Bros. & Co.....	900
Eggers & Heinlein.....	1,200
A. M. Capen Sons.....	1,000
Livingstone & Co.....	1,400
E. B. Strout.....	1,200
W. R. Grace & Co.....	700
Andreas & Co.....	400
Roldan & Van Sickle.....	300
A. N. Rotholz.....	300
For Europe.....	1,100 110,200
SEPT. 16.—By the <i>Cervantes</i> =Bahia:	
J. H. Rossback & Bros.....	20,000
SEPT. 21.—By the <i>Esperanza</i> =Mexico:	
H. Marquardt & Co.....	1,500
Harburger & Stack.....	1,200
Thebaud Bros.....	500
E. Steiger & Co.....	200
For Hamburg.....	2,500 5,900
SEPT. 22.—By the <i>Alliance</i> =Colon:	
Piza, Nephews & Co.....	2,400
Meyer Hecht.....	1,400
E. B. Strout.....	2,000
A. H. Racines.....	1,500
L. N. Chemedlin & Co.....	1,300
Lawrence Johnson & Co.....	1,000
G. Amsinck & Co.....	1,100
J. Ferro.....	1,000
C. Wessels & Co.....	500 12,200

AFRICANS.

	POUNDS.
AUG. 25.—By the <i>Cevic</i> =Liverpool:	
United States Rubber Co.....	56,000
Rubber Trading Co.....	11,500 67,500
AUG. 25.—By the <i>Kroonland</i> =Antwerp:	
George A. Alden & Co.....	125,000
A. T. Morse & Co.....	16,000 141,000
AUG. 27.—By the <i>Teutonic</i> =Liverpool:	
George A. Alden & Co.....	12,000
Joseph Cantor.....	2,000
Poel & Arnold.....	2,500 16,500
AUG. 28.—By the <i>Phoenix</i> =Hamburg:	
Poel & Arnold.....	14,000
Rubber Trading Co.....	1,500 15,500
AUG. 28.—By the <i>Patria</i> =Lisbon:	
United States Rubber Co.....	55,000
AUG. 31.—By the <i>Zeeland</i> =Antwerp:	
George A. Alden & Co.....	20,000
AUG. 31.—By the <i>Arabic</i> =Liverpool:	
George A. Alden & Co.....	90,000
SEPT. 3.—By the <i>Patricia</i> =Hamburg:	
Rubber Trading Co.....	7,500
A. T. Morse & Co.....	3,500 11,000
SEPT. 4.—By the <i>Germanic</i> =Liverpool:	
George A. Alden & Co.....	17,000
United States Rubber Co.....	11,500
Poel & Arnold.....	9,000
Henry A. Gould Co.....	7,500 45,000

AFRICANS—Continued.

SEPT. 8.—By the <i>Etruria</i> =Liverpool:	
Poel & Arnold.....	34,000
Robinson & Tallman.....	11,000
A. T. Morse & Co.....	2,000 47,000
SEPT. 8.—By the <i>Statenland</i> =Rotterdam:	
George A. Alden & Co.....	62,000
Poel & Arnold.....	37,000 99,000
SEPT. 8.—By the <i>Finland</i> =Antwerp:	
Poel & Arnold.....	73,000
A. T. Morse & Co.....	81,000
George A. Alden & Co.....	10,000
Joseph Cantor.....	5,000
William Wright & Co.....	3,000 172,000
SEPT. 11.—By the <i>Pennsylvan</i> =Lisbon:	
Poel & Arnold.....	44,000
SEPT. 9.—By the <i>Majestic</i> =Liverpool:	
United States Rubber Co.....	30,000
Poel & Arnold.....	3,000 33,000
SEPT. 10.—By the <i>Graf Waldersee</i> =Hamburg:	
A. T. Morse & Co.....	18,000
Poel & Arnold.....	3,000 21,000
SEPT. 12.—By the <i>Campania</i> =Liverpool:	
A. T. Morse & Co.....	17,000
Poel & Arnold.....	5,000 22,000
SEPT. 14.—By <i>La Gascoyne</i> =Havre:	
A. T. Morse & Co.....	22,000
SEPT. 14.—By the <i>Vaderland</i> =Antwerp:	
George A. Alden & Co.....	235,000
A. T. Morse & Co.....	9,000
Poel & Arnold.....	10,000
For Boston.....	100,000 354,000
SEPT. 17.—By the <i>Oceanic</i> =Liverpool:	
George A. Alden & Co.....	43,000
United States Rubber Co.....	45,000 88,000
SEPT. 19.—By the <i>Philadelphia</i> =London:	
George A. Alden & Co.....	38,000
United States Rubber Co.....	22,000
Poel & Arnold.....	4,500 64,500
SEPT. 21.—By the <i>Umbria</i> =Liverpool:	
Poel & Arnold.....	25,000
A. T. Morse & Co.....	7,000
George A. Alden & Co.....	2,000 34,000
SEPT. 22.—By the <i>Noordam</i> =Rotterdam:	
A. T. Morse & Co.....	30,000
Poel & Arnold.....	6,000 36,000
SEPT. 23.—By the <i>Palatia</i> =Hamburg:	
A. T. Morse & Co.....	33,000
Rubber Trading Co.....	4,500 37,500

EAST INDIAN.

	POUNDS.
AUG. 29.—By the <i>Philadelphia</i> =London:	
Poel & Arnold.....	5,500
SEPT. 2.—By the <i>Tieberghein</i> =Singapore:	
Otto Meyer.....	10,000
Winter & Smillie.....	17,000
Rubber Trading Co.....	15,000 42,000
SEPT. 5.—By the <i>Schoenfels</i> =Calcutta:	
Poel & Arnold.....	11,000
SEPT. 5.—By the <i>St. Louis</i> =London:	
Poel & Arnold.....	9,000
SEPT. 9.—By the <i>Philadelphia</i> =London:	
Poel & Arnold.....	44,500
SEPT. 21.—By the <i>Macduff</i> =Singapore:	
William Wright & Co.....	15,000
Otto Meyer.....	14,000 29,000
PONTIANAK.	
SEPT. 2.—By the <i>Tieberghein</i> =Singapore:	
Robert Branss & Co.....	160,000
Poel & Arnold.....	150,000 310,000
SEPT. 21.—By the <i>Macduff</i> =Singapore:	
Poel & Arnold.....	250,000
Robert Branss & Co.....	135,000
W. R. Russell & Co.....	55,000
J. H. Recknagel & Co.....	50,000 490,000

GUTTA-PERCHA AND BALATA.

	POUNDS.
SEPT. 8.—By the <i>Furnessia</i> =Glasgow:	
Kempshall Manufacturing Co.....	1,500
Earle Brothers.....	1,000 2,500
BALATA.	
AUG. 26.—By the <i>Maracas</i> =Trinidad:	
George A. Alden & Co.....	5,200
E. F. Darrell & Co.....	1,000 6,200

SEPT. 12—By the <i>New York</i> =London:		
Poel & Arnold.....	5,500	
H. A. Gould Co.....	4,500	10,000
SEPT. 21.—By the <i>Minneapolis</i> =London:		
H. A. Gould Co.....	3,500	

Exports:

India rubber.....	69,011	\$46,872
Reclaimed rubber.....	104,373	12,691
Rubber Scrap Imported.....	1,097,896	\$67,173

AUG. 3—By the <i>New England</i> =Liverpool:	
Poel & Arnold—Fine Para.....	5,667
AUG. 11.—By the <i>Philadelphia</i> =London:	
Poel & Arnold—East African.....	11,008
AUG. 20.—By the <i>Saxonia</i> =Liverpool:	
George A. Alden & Co.—African.....	1,551
Total.....	46,692
[Value, \$30,662.]	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—AUGUST.

Imports:	POUNDS.	VALUE.
India-rubber.....	3,639,422	\$1,936,323
Gutta-percha.....	11,273	5,476
Gutta-jelutong (Pontianak) ..	679,182	16,252
Total.....	3,729,877	\$1,958,051

BOSTON ARRIVALS.

AUG. 1—By the <i>New England</i> =Liverpool:		POUNDS.
George A. Alden & Co.—African.....		22,460
AUG. 3—By the <i>Lancastrian</i> =London:		
George A. Alden & Co.—East Indian		6,006

AUG. 28.—By the <i>Nubia</i> =Singapore:	
Otto Meyer.....	23,863

AUGUST EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Cmok, Schrader & Co.....	9,350	6,290	34,180	—	49,820	68,170	7,480	48,040	4,331	128,021	177,841
Frank da Costa & Co.....	23,116	4,094	108,056	150	140,416	43,552	3,204	24,000	—	70,756	211,172
Adelbert H. Alden.....	47,505	14,255	37,908	—	99,668	57,010	7,900	13,860	4,016	83,386	183,054
Singlehurst, B'hurst & Co.....	—	—	—	—	—	9,532	2,182	1,984	—	13,698	13,698
Neale & Staats.....	—	—	63,200	—	63,200	31,416	4,032	—	10,570	46,018	109,218
Denis Crouan & Co.....	8,247	671	30,750	—	39,668	1,328	170	7,293	—	8,791	48,459
Pires, Teixeira & Co.....	12,413	829	4,776	—	18,018	1,954	—	1,047	—	3,001	21,019
Sundry small shippers.....	5,715	340	5,162	—	11,223	10,529	1,119	10,931	733	23,312	34,535
Direct from Iquitos.....	—	—	—	—	—	1,445	755	1,035	32,753	35,988	35,988
Direct from Manáos.....	118,071	12,454	19,465	3,798	153,788	195,678	23,259	26,927	13,929	259,793	413,581
Total for August.....	229,417	38,939	303,497	3,948	575,801	421,214	50,101	135,117	66,332	672,764	1,248,565
Total for January-July.....	4,370,521	1,082,239	2,955,118	1,066,171	9,474,049	5,079,357	634,329	4,663,578	2,494,580	9,671,844	19,145,893
TOTAL SINCE JANUARY 1.	4,599,938	1,121,178	3,258,615	1,070,119	10,049,850	5,500,571	684,431	4,598,695	2,560,912	10,344,608	20,394,458

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
July, 1903.....	4,320,853	246,296	4,074,557	July, 1903.....	2,881,984	3,598,000	[676,016]
a January-June.....	31,218,867	1,505,217	29,713,650	January-June.....	29,318,128	19,415,872	9,902,256
Seven months, 1903.....	35,539,720	1,751,513	33,788,207	Seven months, 1903.....	32,200,112	23,013,872	9,186,240
Seven months, 1902.....	30,308,134	2,102,630	28,205,504	Seven months, 1902.....	29,076,096	17,790,528	11,285,568
Seven months, 1901.....	34,899,446	2,172,839	32,726,605	Seven months, 1901.....	31,518,144	18,871,552	12,646,592
a—Corrected figures.				b—Net Exports.			
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
July, 1903.....	2,806,320	525,140	2,281,180	July, 1903.....	121,880	6,380	115,500
January-June.....	18,357,240	6,666,020	11,671,220	January-June.....	899,360	94,380	804,980
Seven months, 1903.....	21,163,560	7,211,160	13,952,400	Seven months, 1903.....	1,021,240	100,760	920,480
Seven months, 1902.....	19,546,780	7,583,180	11,963,600	Seven months, 1902.....	870,760	80,960	789,800
Seven months, 1901.....	17,127,000	6,590,100	10,536,900	Seven months, 1901.....	897,820	117,040	790,780
FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
July, 1903.....	1,325,280	690,140	635,140	July, 1903.....	218,900	4,400	214,500
January-June.....	8,322,560	4,609,880	3,712,680	January-June.....	1,504,580	12,320	1,492,260
Seven months, 1903.....	9,651,840	5,300,020	4,351,720	Seven months, 1903.....	1,723,480	16,720	1,706,760
Seven months, 1902.....	10,013,520	4,917,660	5,095,860	Seven months, 1902.....	1,600,280	10,780	1,589,500
Seven months, 1901.....	10,162,020	6,310,420	3,851,600	Seven months, 1901.....	1,384,020	19,580	1,364,440
BELGIUM.							
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.				
July, 1903.....	284,855	435,977	[151,002]				
c January-June.....	3,732,883	2,643,519	1,089,364				
Seven months, 1903.....	4,017,768	3,070,496	938,272				
Seven months, 1902.....	4,198,295	2,796,705	1,401,593				
Seven months, 1901.....	4,062,625	3,345,782	716,843				

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

*General Commerce.

†Special Commerce.

c—Corrected figures.

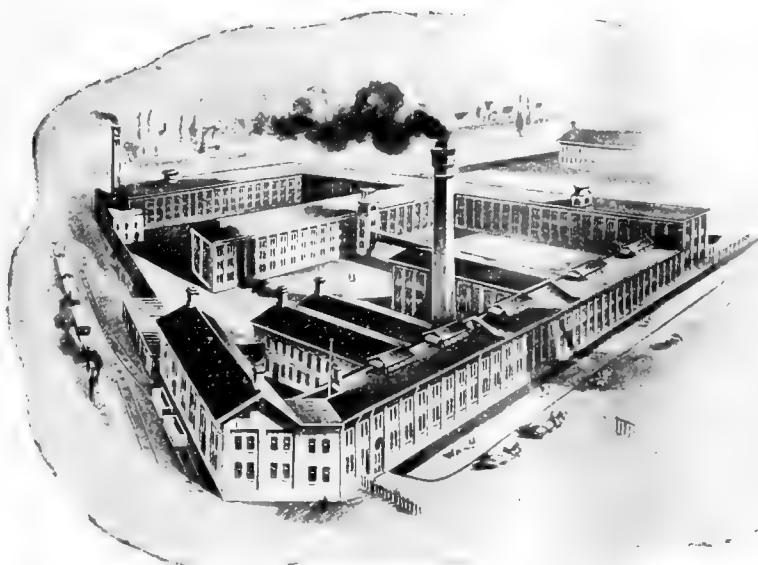
d—Net Exports.

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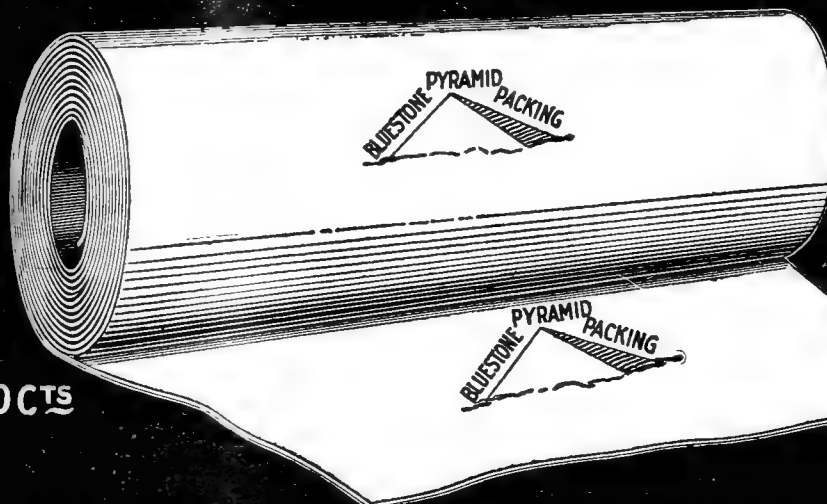
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THE TRUSTS NOT SO TERRIBLE.

THERE appears to be little attention given, in current political discussions in the United States, to the idea, at one time so widely ventilated, of governmental regulation of Trusts, with a view to preventing them from gaining control of the whole field of industrial production in this country. A year or two ago there were many people who seriously considered it the first duty of the government to act promptly for the protection of the masses against the Trusts. This journal has more than once hazarded the opinion that before the attention of Congress could be concentrated upon this subject, some of the so called Trusts, instead of needing to be curbed, would be in need of protection from falling down through sheer weakness. Recent events seem to confirm this view.

Lately the public has been treated to some sensational testimony, in legal proceedings growing out of an attempted combination of shipbuilding concerns, the details having been brought out more fully than in any like case in the past, and the effect cannot fail to be to make investors more cautious for awhile in regard to industrial securities. Without questioning the motives of the first movers in the proposed shipyards consolidation, it is plain that the object of those who assumed control of the financial transactions were not at all concerned about shipbuilding. Their program was to manufacture certificates of stock which it was hoped the public would buy, without asking whether these shares represented anything of intrinsic value. If, after their sale, the shares should prove worthless, the promoters who stood as vendors expected to be able to avoid all responsibility. The public failed to become interested, however, and the promoters now hold a mass of "securities" of little value to them as capital. Meanwhile the shipyards have not ceased to exist, and efforts are being made to settle the question of ownership, that orders for work now in sight may be utilized.

Doubtless these disclosures will be recalled whenever, for sometime to come, the public is invited to invest in the capital of new industrial consolidations. And naturally one effect will be to place a stigma upon Trusts in general. Yet this shipbuilding case is entirely apart from the Trust question. The real question is whether commodities can be produced more economically by combining a number of plants than by operating them independently, and, if so, whether the field is narrowed for small or individual enterprises. The history of the attempted shipbuilding Trust proves nothing whatever under this head. In that case certain persons of prominence in the financial world, seeing a new movement on foot to combine industrial plants, offered to "finance" the transaction, their pay to be in the shape of some millions of dollars of promoters' shares. Combining the shipyards might or might not have been good business; creating an excessive amount of promoters' shares was very bad business, comparable to "salting" a gold mine, or to hypothecating the same warehouse receipts with two banks. It has been a great blow to Trust development.

But if public sentiment is less alarmed than formerly in

regard to the Trusts getting control of all the industries and compelling the payment of exorbitant prices for manufactured commodities, there is evidence of a growing demand for the protection of investors against worthless corporation stocks. To day banks are so closely regulated by law that no holder of a banknote need fear its possible depreciation in his hands. The States also practically guarantee the reliability of the insurance companies, while railway companies are required by law to report so fully in regard to their condition as to enable everybody to judge of the value of their shares. It will not be strange if a demand should next arise for the safeguarding of the public against the sale of stock certificates without some basis of value. Without doubt there is room for useful legislation here, but complete protection of the public will never exist. Before the first joint stock company was, people with more money than judgment easily found chances to make themselves poor, and if it should now become impossible to buy any but "gilt edge" stocks, somebody would begin selling town lots in the moon to investors who prefer foolish to wise use of money.

Many so called Trusts organized during the past few years have ceased to exist, and not all the others are facing the future with equanimity. Some very big concerns have been worried by the competition of the once despised "little fellows" on the outside. Another cause for discomfort is the prospect that, in the event of the dissolution of many a big concern, the distribution of its assets might be very one sided. It is said that Mr. Carnegie put his steel works into the control of the steel Trust on terms which will enable him to take them back in case the Trust fails, regardless of what the other shareholders may get, and the steel Trust is not exceptional in this regard. Altogether the existing Trusts appear to have enough trouble of their own not to need congressional action to protect anybody against them, while the disclosures regarding the projected United States Shipbuilding Co. will serve for a long time to discourage the organization of new companies capitalized for many times their real value.

THE BRAZILIAN TAX ON RUBBER.

AMAZONAS is truly a state that lives by rubber. Not only is rubber the source of income of the people there who work and of those who engage in trade, but it is especially the source of the public income. It even supports people who neither work nor trade, judging from the recommendation by the governor at Manáos, in his last message to the state legislature, that fifteen "worse than useless" revenue stations be closed, they not having collected a cent for a year, though the officials regularly drew their pay.

According to Governor Nery, the state revenue in 1902 was equivalent to \$3,109,814.24, of which all but \$33,913.21—about 1 per cent.—resulted from the tax on rubber exports. We believe that the theory prevails in the Amazon states that the foreigner pays the tax on rubber; therefore, no matter how high the rate, no burden falls upon their own people. But the theory is a mistaken one.

Their rubber would bring precisely the same price in the consuming markets, taxed for export or untaxed, and every *milreis* exacted at the Manáos or Pará custom houses leaves so much less for the citizens of those states than they would have if the government kept its hands off. Everybody in Amazonas believes that rubber from that state is smuggled across the rio Javary and then sent down the Amazon as the product of Peru, thereby avoiding the payment of duties to any Brazilian state. Yet in New York that rubber brings the same price, grade for grade, as the rubber taxed at Manáos. Which indicates that the seller of untaxed rubber gets more for his product than the other fellows.

Of course the state is bound to have a revenue, and the only resource of an undeveloped state is to put a tax on the natural products exported. The people on the Amazon do nothing to make their lands valuable, and therefore taxable; there are no corporations, to pay for franchises; there is practically nothing in that region but a natural monopoly of rubber of a grade that is much wanted by the outside world. And when this want operates to induce the natives to work in the *seringaes*, the government thinks to make the unloved "foreigner" pay dearly for the rubber by imposing as a tax "all that the traffic will bear." The Brazilians really pay the taxes, as they ought to do, but perhaps the rate would be lower if they better understood the situation—and if they ever stopped to ask what the government gives them for their money.

From Governor Nery's message it is possible to compute the average tax on rubber at Manáos during 1902 at 10.2 cents per pound—assuming 12 pence to have been the average exchange for the *milreis*—and as the tax is 20 per cent. *ad valorem*, the average export price of rubber at Manáos would work out at 51 cents per pound for all grades, including Caucho. It is interesting to note in this connection that the average import value of all Brazilian rubber into the United States during 1902 was 49.9 cents per pound, showing that the Manáos authorities were careful to avoid undervaluation.

BLUE, GREEN, AND RED LATEX.

IT is said that experimenters in Roubaix, France, have succeeded in making silkworms do their own dyeing. By feeding the voracious caterpillars on leaves containing a natural or artificial pigment, they have obtained raw silk in red, blue, and bright orange. We may before long see "natural colored silk" made and sold—no doubt at a fancy price.

Now your up-to-date rubberman does not let anything of that sort happen without beginning to think. He knows that certain shades of color in rubber are much to be desired, but have never yet been obtained in the crude article. He wonders if things have gone back far enough, and straightway places an order for certain chemicals and pigments to be shipped to his plantation.

It does not yet transpire what the outcome will be, but fancy pictures the time when carefully prepared crude rubber will be shipped in assorted colors from the tropics. The blue will be tinged by the infusion of indigo poured about the trees in one section of the plantation, while red and orange and green will be secured by other pigments.

REPORT OF A GERMAN RUBBER FACTORY COMPANY.

AT the general meeting of the Aktiengesellschaft Vereinigte Gummiwaaren-Fabriken Harburg-Wien, at Harburg a/d Elbe, Germany, on October 24, the directors presented their report for the thirty-first business year of the company, ending June 30, 1903. In addition to a detailed balance sheet, the directors presented a general report to the shareholders, a translation of which is given below, as likely to be of interest to many readers outside of Germany in showing to what extent the holders of shares in corporations in that country are taken into the confidence of the management.

GENTLEMEN: The business year closed on June 30 shows a result slightly lower than that of last year, although our factories were actively employed in all branches and our output was in advance of that of last year. The major portion of this increase is due to our Harburg factory, being equally distributed over all its branches of manufacture; our exports also exceeded those of last year.

Our factory in Wimpassing, Austria, has been used principally for export purposes. Owing to the unchanged economic conditions of Austria-Hungary and on account of its unfavorable geographical location, increased expenditures were entailed. Our Linden works have given satisfactory results, and it is hoped that by taking up new branches and new articles of manufacture it will continue to develop.

The convention on rubber balls during the past year had excellent results and has been extended for a further term of five years.

As recorded in our last report, our new product "Galalith," has been taken up as a regular manufacture, but the special arrangements for its manufacture in our new building will not be completed until the end of this year, and only after that has been completed can we expect to produce it on an extensive scale. At present we can only say that the samples furnished by us to the several industrial branches during the past year have given entire satisfaction, and we hope that the development of this branch will prove to be profitable.

The crude rubber prices experienced during the past business year an advance without comparison since 1899-1900; this advance dates from August and September of last year. The advance in crude rubber prices, compared with the former year was as follows:

Fine Pará.....	49 per cent.
Manãos scrappy.....	43 per cent.
Better African middle sorts.....	56 per cent.
Inferior African sorts.....	92 per cent.

This enormous advance in prices is chargeable in the main to the large consumption and comparatively small supplies. The latter amounted to, according to statistics on hand at the end of August:

	1901	1902	1903
Tons ..	3894	3074	1846

The total world's production of rubber amounted during the period of—

July 1, 1901, to June 30, 1902, to.....	53,887 tons
July 1, 1902, to June 30, 1903, to.....	55,603 tons

The total world's consumption of rubber during that period was—

July 1, 1901, to June 30, 1902.....	51,170 tons
July 1, 1902, to June 30, 1903.....	55,276 tons

The total world's supply on hand amounted, during that period to—

July 1, 1901, to June 30, 1902.....	6,816 tons
July 1, 1902, to June 30, 1903.....	5,053 tons

These figures prove, that although the production has slightly increased, the consumption, comparatively, was far in excess, and the visible supply therefore decreased quite materially. The reason for this large consumption is not to be attributed to business prosperity of the various countries, but mainly to the fact that the bicycle branch consumes immense quantities for its purposes; besides bicycles in the larger cities, many public vehicles and equipages are mounted with rubber tires.

At the present time it cannot be foreseen how far the crude rubber prices will advance, until a sufficient amount can again be accumulated in store to enable the factories to complete their necessary supplies, which at present are entirely depleted, and purchases are made only as far as actual necessities require. The prices of other articles used in the rubber goods manufacture also have materially increased, in some instances from 20 to 30 per cent. That these unfavorable conditions finally affected the profit account of the individual factories is self-evident.

If, notwithstanding, we were enabled to do a profitable business during the past year, we are indebted, primarily, to the large stock of crude rubber which we carried over into this year's account, having been bought at a low figure, and, secondly, to the increased volume of business done to which we have already referred.

The selling prices of our goods, owing to the low prices of crude rubber during 1901-02, had a dropping tendency. When, in the autumn of last year, crude rubber prices began to advance at an enormous rate, we were compelled to make an advance in prices, and we were successful, in harmony with other German rubber goods manufacturers, in carrying through a 10 per cent. increase, which, unfortunately, could not go into effect until April 1, of this year.

The magnitude of our factory, and the large number of hands employed, make it imperative that we secure contracts for some time in advance. We are obliged to enter into contracts for future delivery of articles controlled by the seasons, such as shoes, the orders for which are generally received at the beginning of the year, and the deliveries made during the summer and autumn; and, as it is impossible to find a dealer in crude rubber who will take a contract for the year, at monthly deliveries, it is impossible to avoid using raw material purchased at the advanced price in filling orders contracted for at the lower figure.

To keep abreast with the continued high prices of crude rubber we are now endeavoring, with other manufacturers, to advance the prices of rubber goods 10 per cent., for the present, but, should prices continue to rise, the prices of manufactured goods will have to be advanced accordingly.

The importation of rubber shoes from foreign countries has increased, owing to the low import duties imposed on them. The imports from the United States alone, for instance, were 119,300 kilograms in weight against 38,100 kilograms in the year 1900. The import from Russia advanced from 450,100 kilograms during 1901 to 527,300 kilograms. Besides this, Sweden unloads her overproduction of rubber shoes here, while it is impossible for us, owing to the prohibitive tariff of the three countries named, to sell a single pair of shoes there. In the following named countries the import duty on rubber shoes,

and the equivalent rate *ad valorem*, is as stated in the table :

	Per 10 kilos.	Ad Valorem.
In Germany	60 marks	10 per cent.
In Russia.....	222 marks	35 per cent.
In Sweden	135 marks	22 per cent.
In the United States.....		30 per cent.

We hope and expect that in making the new trade agreements with these countries, they will receive such consideration as not to compel us to curtail the manufacture of such necessities as rubber shoes, or, eventually, to cease manufacturing them altogether; and we also hope that the export of other articles to foreign countries will be maintained for us.

Passing to our balance, we have to report, that in our three factories, Harburg, Linden, and Wimpassing, the amount of *M* 533,305.96 had to be expended for new appliances; for new buildings, *M* 207,347.41; for new articles (machinery account), *M* 271,290.04; for new utensils and furniture account, *M* 54,668.51; for liquidations, *M* 144,011.35. The expenses for repairs were *M* 458,415.37 against *M* 479,031.87 in the former year.

The inventory of goods and raw material on hand has been made carefully, in compliance with the provisions prescribed by law, and amounts to *M* 636,650.11 less than in the former year. The patent account has been debited *M* 294,000 for patents on Galalith already obtained, of which during this year *M* 132,104.50 have been written off, so that this account appears in the balance only with *M* 161,895.50.

The supreme court having decided that the premiums received on the issue of new stocks are nonassessable, the amount of *M* 96,615, paid during the years 1900 to 1903, has been returned, and this, with the amount of *M* 80,859.25, which was held in reserve on that account and has now become free—altogether *M* 177,474.25—has been placed to the credit of the regular legal reserve fund, which now amounts to *M* 3,279,339.25, or about 54.6 per cent. of the stock capital.

The doubtful collections account has been written off *M* 10,076.57 less than in the former year, we having been free from any great losses.

The social politic and voluntary contributions were *M* 116,858.68, of which the widows and orphan pension fund of the officers and master workmen received *M* 34,368.80. From the interest on the aid fund of *M* 400,000, pensions and aid were received by 79 persons.

The gross profits of the goods account amount to *M* 3,374,100.67 [= \$803,035.96], against *M* 4,015,875.07 of the former year, being less by *M* 641,774.40.

The net profit for the thirty-first business year of the company amounted to *M* 1,460,070.45 [= \$347,496.77], and was disposed of as follows:

Net Profit for the year.....	<i>M</i> 1,460,070.45
Less addition to Reserve Fund No. 2.	24,749.56
	<i>M</i> 1,435,320.89
Dividend 5 per cent. on the entire Capital.....	300,000.00
	<i>M</i> 1,135,320.89
Less 10 per cent. Commission to the Directors.....	113,532.08
	<i>M</i> 1,021,788.81
Add Balance from profits of 1901-02.....	142,418.25
	<i>M</i> 1,164,207.06
Dividend 15 per cent. on the entire Capital.....	900,000.00
	<i>M</i> 264,207.06
Officers' and Workingmen's Jubilees <i>M</i> 10,000	
Officers' Pension Funds..... 50,000	60,000.00
Balance to 1903-04.	<i>M</i> 204,207.06

THE total dividend on last year's business is 20 per cent

Following is a comparative statement of the company's net profits for five years past, and the rate of dividends:

YEARS.	Net Profits.	Capital.	Dividends.
1898-99.....	<i>M</i> 866,644.67	<i>M</i> 6,000,000	12 %
1899-00.....	1,336,631.99	6,000,000	17½ %
1900-01.....	1,489,537.05	6,000,000	20 %
1901-02.....	1,775,032.57	6,000,000	24 %
1902-03.....	1,460,070.45	6,000,000	20 %

RUBBER INTERESTS IN EUROPE.

ADVANCE IN RUBBER GOODS.

ON October 10 an advance in rubber goods prices took effect in Germany as a result of a meeting of rubber manufacturers held at Hanover, the occasion for which is expressed in the following terms in a circular issued after the meeting:

The continuous advance of crude rubber prices, which, within the year, have reached, according to quality, a rise of from 50 to 90 per cent., the rubber factories are compelled, in order to secure to their customers the present standard quality, to advance their selling prices a further 10 per cent. on all articles of soft rubber for technical and surgical purposes.

The *Gummi-Zeitung* asserts that this action by the manufacturers is justified by existing conditions in the trade, besides which it points out the probability of a further advance in the near future owing to the limited supply of crude rubber as compared with the demand.

THE India-Rubber Manufacturers' Association of Great Britain, in a circular issued from the office of their secretary at Manchester, on September 24, announced that "in consequence of the continued serious advance in the price of raw rubber, the prices of all manufactured rubber goods are advanced 10 per cent., with effect from this date, with the following exceptions—namely, thread, fine cut sheet, proofing, shoes, and asbestos goods, which are being separately dealt with."

The *India-Rubber Journal* points out that the preceding advance on the price of mechanical rubber goods had been far better maintained than any previous combined advance by the British manufacturers. It trusts that the course of the manufacturers' association will be followed by such other firms as are not embraced in its membership.

GERMANY.

THE Asbest- und Gummiwerke Alfred Calmon, A.-G. (Ham-burg), already mentioned in this Journal as having taken on the manufacture of rubber shoes, are now marketing their products in this line.

=The Vereinigte Hanfschlauch- und Gummiwaaren-Fabrik, A.-G., of Gotha, were awarded a silver medal for their display at the German Cities Exposition at Dresden. A bronze medal was awarded to H. Schweider, Sächsische Gummi- und Guttaperchawaaren-Fabrik, of Dresden.

FRANCE.

R. DE LA DEBUTRIE, at Lille, importer of British and American waterproof goods and sporting goods, has removed from 3, place de Rehour, to larger premises at 62, rue Esquermoise.

GREAT BRITAIN.

THE Liberian Rubber Syndicate, Limited, an English company holding a rubber trading monopoly in Liberia, exported from that republic 85,303 pounds of rubber during the year ended September 30, 1902.

=At Preston (England) two prisoners convicted of stealing 162 pounds of India-rubber and 262 pounds of Kowrie gum, were sentenced to three and nine months' imprisonment, respectively.

RUBBER STOCKS, PRICES, AND SPECULATION.

THE charts which have appeared lately in THE INDIA RUBBER WORLD show how wide is the range of fluctuations to which the crude rubber market is liable, especially if a term of years be taken into consideration. The marked advances and declines may not be repeated with any sort of regularity, but it is safe to assume that the same relation of cause to effect exists whenever prices go to an extreme level. Five and a half years ago, when the market had an upward tendency, and manufacturers were concerned about the future of prices, THE INDIA RUBBER WORLD gave space to an extensive discussion of the question "Has There Been Speculation in Rubber?" suggested by the feeling in some quarters that the then prevailing high prices were due to manipulation by selling interests. On looking back through our files we find two articles—from well informed sources—that have so direct a bearing upon the market conditions of to-day that it seems worth while to reproduce them, without any change. The reader should keep in mind, however, that the references to dates and prices in the lines which follow applied to the early part of 1898, and not to the latter end of 1903. Otherwise, the articles might have been written in the very same terms this month.

A LARGE MANUFACTURER SAYS "NO."

[FROM THE INDIA RUBBER WORLD, February 10, 1898.]

"I DO not believe that there is or has been any speculation in crude rubber that can be charged with its high cost to-day," said another manufacturer. "I am a large buyer of rubber, and long have been, and I believe that I can detect a speculative element in the market when one exists. I get reports from importers in New York and Liverpool, and from the leading shippers in Pará, and when I know certainly how much rubber is being shipped, and who receives it, and all the various reports of stocks on hand agree to within 50 tons, I am inclined to believe the reports to be correct. Why, there are no large stocks of rubber anywhere to speculate on. You can't hide rubber. The rubber merchants are strong competitors one with another in Pará, they are so in New York, and they are so in Europe, and every shipment is kept track of until it is in the hands of the manufacturers.

"In New York for months past all arrivals have been turned over at once to manufacturers. There is rubber due us to-day, rubber that we ordered months ago, which the importers assure me cannot be had. There is no such rubber in stock. Don't you think that they would be delivering the rubber and collecting for it if they could get it? At the same time we are receiving rubber now, bought some time ago, at the prices prevailing then, for future delivery, which is costing the importers more money than it is billed to us for. Here is a bill for a lot of rubber now on the way to our factory, at 12½ cents a pound less than we could go into the market to-day and buy it at, but we contracted for it early in the season. If the current prices of rubber were the result of speculative movements, do you think that our importers would have got themselves into such a fix as this? Several months ago we began to observe how closely the factory demand here kept up with the arrivals of rubber, and began buying for forward delivery. We have orders out for delivery in May, and the saving by this course has been very important.

"I believe that fine Pará rubber will shortly reach \$1; it isn't so far from it now. The increase in production down there is

never large from year to year. It can't be. Then Madagascar rubber has fallen off; we can't buy Assams at any price; it is hard to get Benguela sorts, and so on. The people who talk about prices being due to speculation are not well informed. There never has been less of it in the market than to-day. We are declining orders for rubber goods for future delivery at present prices, in view of the probability of still higher crude rubber."

A TALK WITH A BROKER.

[FROM THE INDIA RUBBER WORLD, February 10, 1898.]

"WHEN I am asked how far the high prices of rubber are due to speculation," said a broker, "it must first be understood in what sense that word is used. To a certain extent all buying and selling is speculation. But you mean, of course, the buying of rubber by large operators, with the object of gaining control of heavy stocks, in order to be able to sell out at higher prices when manufacturers' supplies have become exhausted, and their needs compel them to pay practically whatever may be asked. There is another class of buying which is also speculative—where people outside the trade invest in rubber, in the hope of a rise, just as they would take a 'flyer' in wheat or in stocks. My answer to your question is that I don't believe there has been enough buying of rubber in either of these classes, in a good many years, to have influenced prices. Certainly there has not been of late."

"What is the true explanation of the present dearth of rubber?" the broker was asked.

"It is a question of supply and demand. We must all the time take account of stocks. Other things being equal, the price of rubber advances as stocks decline, just as with other commodities. Whenever the available supplies of rubber become low, either from a shortage in production or because of activity in manufacturing, sellers become firmer in their demands and prices go up. We know that the production of Pará rubber has not fallen off, and yet the visible supplies of this class at the beginning of this year were smaller than at the same date in any year since 1882. Pará rubber stocks generally have been smaller for three years past than formerly. There is good reason for believing that the rubber has been bought on factory account, instead of being withheld from the market for speculative purposes. In the case of Africans, however, excepting Congo sorts, there has been some decline in the output, which has helped to sustain prices."

"Can the world's supply of rubber be estimated accurately?"

"No. It is to every importer's interest to conceal the amount of his holdings, and as statistics of rubber stocks are based usually on statements made by the importers, it is plain that these figures are not always a safe guide. One never knows at what moment an unsuspected lot of rubber may be brought from its hiding-place, to the confusion of his best-laid plans to profit from a particular situation in the trade. On the other hand, all the rubber produced in the world, at some stage, is accounted for in governmental statistics, which have the confidence of the trade, and which serve to aid in checking private estimates as to the total volume of transactions. Besides, the broker who is on the alert generally can detect movements of a speculative nature."

"But people speculate in other commodities; why not in rubber?"

"First, there are no such organized facilities for trading in

rubber as, for instance, in wheat. Rubber can't be bought on 'margin.' In the next place, it is not a safe commodity to carry. You may buy wheat, and it doesn't deteriorate in quality or quantity. Buy whiskey, and the leakage for a given time can be calculated to mathematical accuracy. But buy rubber, and no man on earth can predict the extent of the shrinkage. An outsider once, who had noticed that rubber sometimes fluctuated, instructed me to buy a lot for his account, and then waited for a rise. When he had grown tired waiting, and gave orders to sell, he found that not only had the rubber declined 10 per cent. in the market, but it had lost 7 per cent. in weight, making him a loser in two ways."

"Would it be possible to 'corner' the market for Pará rubber in these days?"

"It would be a very difficult undertaking. The Pará rubber output for 1897, figured at the prices prevailing there at the end of the year, was worth not less than \$34,000,000. The people who bought this rubber did so with the expectation of a quick turnover, in order to be able to use their capital again. Now, in order to gain a controlling interest in the Pará market it would have been necessary from the start to pay more for rubber than the prices at which manufacturers, in the ordinary conduct of their business, buy freely. There would have to be taken into consideration the interest charges on the large capital involved, and the heavy loss from shrinkage in case any rubber was held long, not to mention the possibility of having finally to unload some of it at less than cost. There are many goods made of rubber for which consumers will not pay a high price, for which reason there are limits in cost that a manufacturer cannot go beyond. Then there are other rubbers. When Vianna got up his great rubber 'corner' some years ago, although he made an utter failure, he frightened manufacturers into experimenting with other sorts than Pará, giving rise to the present large use of Africans. As compared with Vianna's day, the Pará crop is now twice as great, and the business is scattered over Brazil, Peru, and Bolivia, and harder to control than when, as he found it, all centered at Pará. And the value of African rubbers is now assured, whereas it had then to be learned.

"There was a good chance for speculating in Pará rubber

within the past year," the broker went on. "The demand has been so great that any one buying largely at an advance over the market prices, could have unloaded at a still greater advance, but the importers didn't recognize it until it was too late. There was an equally good chance two years ago, at the beginning of the 'boom' in rubber consumption in Europe. The importer who could have foreseen the heavy demand there, and bought largely while prices were still low, could have unloaded at better profits than most of them did pocket in the end."

"Where are rubber prices made, as a rule?"

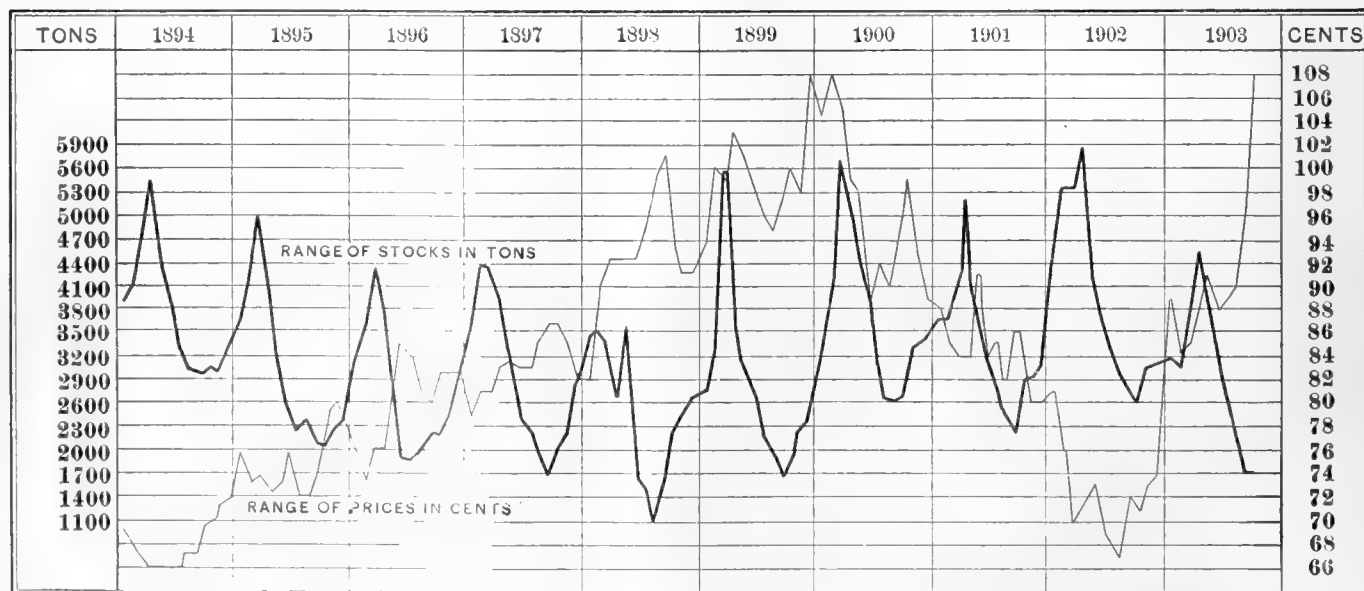
"Where the largest stocks are. If there are large holdings at Pará and limited supplies of Pará sorts elsewhere, the controlling quotations will be made in the Pará market. As between New York and Liverpool, whichever port is better supplied with a certain class of rubber than the other, to speak generally, fixes the price which the market that is short of the rubber must pay for it. Hence prices are made here or there, as conditions vary."

"Shall we have cheaper rubber soon?"

"It doesn't seem so. The 'boom' in the European industry may have passed, but it leaves the manufacture of rubber on a larger scale there than before. There may not be any great 'boom' in business in America, but indications all point to a continuation of our large rate of rubber consumption. The Pará rubber crop may be expected to show the usual small yearly rate of increase, but, judging from recent history, Africans will hardly do more than hold their own in quantity. African rubbers, by the way, are coming more and more to be sold on their merits, independently of the market for Pará grades, and some of these, with an established reputation but a decreased yield, are selling higher in consequence. There is, in addition to all these considerations, a short interest in this market so far as certain grades are concerned, and this has the effect always of stiffening prices some, but it is not attributable to what can properly be called speculation."

* * *

In this connection it has been thought well to present the chart below, relating to conditions for ten years past, an explanation of which appears on the page following.



THE FIGURES TO THE LEFT, EXPRESSING STOCKS IN TONS, RELATE TO THE HEAVIER LINE ACROSS THE CHART.

THE FIGURES TO THE RIGHT, EXPRESSING PRICES IN CENTS, RELATE TO THE LIGHTER LINE ACROSS THE CHART.

COMPARISON OF PARA RUBBER STOCKS AND PRICES FOR TEN YEARS.

RELATION OF RUBBER STOCKS TO PRICES.

THE chart on the preceding page is designed to illustrate the correspondence between the visible supplies of rubber and prices of that material. The data upon which this chart is based are the figures appearing monthly in THE INDIA RUBBER WORLD for ten years past, showing—

1. The world's visible supply of Pará rubber (excluding Caucho), in tons.

2. The New York quotations for new Islands fine Pará rubber, in cents per pound.

It will be seen that, at the beginning of the ten years covered by the chart, rubber stocks were increasing, and prices were declining. Soon stocks began to fall off, while prices sharply advanced. The price fluctuations all the way up to the present, while not adhering closely to the rule, yet illustrate the tendency of high prices to occur at times when stocks are low. For example, see the highest prices in 1898, coincident with the lowest stocks in that year. The lowest prices for eight years were touched in 1902, in which year the stock figure reached was the highest shown in the chart. At the end of the two fluctuating lines, it will be seen that they indicate stocks far below the average, and exceptionally high prices.

The largest stocks of Pará rubber will be found to accumulate in the spring months of each year, when the active Amazon "crop" period is winding up. This rubber passes from the hands of the dealers during the summer, so that the end of autumn, as a rule, shows the smallest stocks of the year, there being no large arrivals at Pará until the last three months of each year. The general relation between stocks and prices may disappear in periods when the demand for rubber is not active. Thus during the summer of 1899 there was a sharp decline in prices, although stocks were falling at the same time; the end of the same year saw prices and stocks of rubber going up the same time, indicating that an improved demand had set in.

Following is a summary of the world's rubber supplies.

THE figures below, compiled from the records of a leading European house, do not embrace stocks on the continent of Europe. Stocks of Pará on the continent are comparatively unimportant, however, and the supplies of other sorts there are chiefly at Antwerp, the full details of which market appear regularly in THE INDIA RUBBER WORLD. It is not practicable at any time to compute the amount of Africans afloat.

	May 31.	June 30.	July 31.	Aug. 31.	Sept. 30.
<i>Para Grades:</i>					
Stocks, Liverpool... tons	1645	1601	1203	800	274
Stocks, New York.....	376	383	204	200	66
Stocks, Para.....	110	129	140	105	260
Afloat ..	1490	1185	905	899	1260
Total.....	3621	3293	2452	2004	1860
<i>All Other Grades:</i>					
Stocks, Liverpool.....	377	456	367	326	386
Stocks, London	227	224	210	238	197
Stocks, New York	229	246	229	246	190
Total.....	833	926	806	810	773
Grand Total.....	4454	4224	3258	2814	2633
Same dates, 1902.	6181	5520	5022	4515	4121

It is not to be expected that any two statisticians should agree exactly in estimating stocks, and yet any differences between statements usually is more apparent than real, being due chiefly to different classifications. For example, compare the above figures for Liverpool with the table given in the market review department of this issue by Messrs. Till & Co. The showing is:

	Above Table.	Till & Co.
Para sorts. tons	274	243
Other sorts.....	386	426
Total.....	660	669

In the above table 31 tons of Caucho is embraced in "Para"; in Messrs. Till's table it is classified with "Other sorts." The point of interest is that the two houses agree to within nine tons in estimating the amount of rubber in Liverpool held, on October 1, by nineteen firms.

MADAGASCAR RUBBER IN THE ANTWERP MARKET.*

IN April last the governor general of Madagascar wrote to the president of the French chamber of commerce at Antwerp for information in respect to the commercial position of Congo and Madagascar Caoutchouc and copal gum on the Antwerp market.

M. Ed. Borniche, the president of the chamber, kindly sent information by return mail to the chief of the colony in a very interesting letter, which we give below, in response to the various questions asked which will be very useful to those in Madagascar who are concerned in the commercial exportation of Caoutchouc and copal gum. This letter emanates from M. Emile Grisar, a commission merchant whose house in Antwerp is the largest and the oldest engaged in the India-rubber trade.

"MR. PRESIDENT: I am in possession of your valued favor of May 15, containing an extract from a letter No. 283, under date of April 6, which you sent to General Galliéni, governor general of Madagascar and its dependencies, relative to the subject of the sale and conditions of Congo and Madagascar Caoutchouc in the Antwerp market. It is with true pleasure that I hereby reply to the questions of General Galliéni, and I should be very happy to see satisfactory results arise therefrom.

*Translated for THE INDIA RUBBER WORLD from the *Revue Générale Coloniale* (Brussels), September 27, 1903.

"We have many times received at Antwerp, Madagascar Caoutchoucs which have always been sold at good prices. I will first mention the Caoutchouc shipped from Tamatave, which comprises the best quality coming from the great island.

"This is sent us in the form of large cakes, of widely varying weights, very pure, of great consistency, containing no impurities, but having a large amount of volatile matter amounting, according to the shipments, in the neighborhood of 15 to 20 per cent. The presence of this matter, while not the cause of a large loss, is nevertheless the cause of a lower value of the merchandise, since the shipper pays the export charges on this 20 per cent., the freight, the packing, and then finally, on selling it, the buyer is subject to a considerable loss which the Caoutchouc undergoes in washing. I would consequently advise that, after it has been coagulated, the larger cakes should be cut into sections, making pieces of medium size, and then dry them in the shade, and then ship them in strong cases, to protect them from breaking and prevent theft during the voyage. Present value 9.50 francs per kilogram [=83½ cents per pound].

"The Caoutchouc sent from Majunga has the same appearance as the preceding, but sometimes contains bark and foreign particles, which the acid juice has covered in coagulating. This kind also sometimes contains some sand, and always a large amount of volatile matter amounting to 20 to 30, and some-

times 35 per cent. On this account, several qualities are recognized, having prices according to their degree of purity. Present price 6.75 to 7.75 francs per kilogram [=57½ to 62 cents per pound].

"Finally, Madagascar ships a quality of the lowest grade, known on the European markets under the name of East Coast Niggers. This comes in the form of medium sized balls, made up of Caoutchouc filaments rolled upon themselves. Unfortunately, the better part of these balls is only the outside film, for on taking it off we find the center to be crammed with stones and earth, which gives this gum considerable false weight (50 to 75 per cent. of foreign matter introduced with fraudulent intent). The intrinsic quality of this Caoutchouc is excellent, for were it pure, it would be worth 9.50 to 9.75 francs, but on account of the foreign matter which is enclosed it scarcely brings more than 4 to 4.50 francs. Here we see a great cause of depreciation and a remedy is urgently needed.

"On the other hand, there appears to me to be no doubt that the diminution observed in the Madagascar harvest is caused by the ravages made by the gatherers. Steps should be taken to see if the trees or plants which produce the Caoutchouc on the island are not susceptible of being reasonably tapped, so as to prevent its perishing as a result of this operation, and if so, there should be severe legislation specifying by what means, according to age and size, these plants should be tapped and by what process.

"We were a long time under the impression that in the independent Congo Free State the *lianes* (vines) could be periodically bled without their being necessarily lost; but practice shows that the natives cut the *lianes* in sections of 1 meter in length for the purpose of obtaining suitable results; the pieces being suspended, the milk runs out freely. But otherwise, when they are bled in a rational and prudent manner, the quantity of the milk is insignificant, and the *liane* dies slowly of its wound. We must necessarily conclude, that both processes are equally defective.

"The system which has been adopted is as follows: To transplant as many *lianes* as are destroyed, and even more, so as to make up for the deficit which will not fail to occur within a few years. For this purpose the legislation of the Congo state has considered it useful to reinforce certain provisions of the enactment of January 5, 1899, for the purpose of preventing the impoverishment of the Caoutchouc forests of the domain. This enactment notably prescribes that there must be annually planted in the forests of the state a number of Caoutchouc producing trees or *lianes*, calculated on a basis of 150 plants at least per ton of Caoutchouc gathered thereon during the year. A later enactment carries this up to 500 plants for each ton, dating from January 1, 1903.

"As a result of the enforcement of this law on the companies and the individuals engaged in gathering Caoutchouc, the number of plants set out in 1901 amounts to about 510,000, against 500,000 in 1900, and 410,000 for the preceding year. Besides, we may estimate the total number of Caoutchouc bearing plants planted by the state as being in the neighborhood of 2,500,000, which are a direct result of the law or as conforming to the instructions of the government which orders, independent of what has been stated, the commencement of vast plantations of Caoutchouc plants throughout the eastern territory.

"I will add that before proceeding with these replantings the state consulted with, and made inquiries through, agricultural engineers and foresters, for the purpose of determining suitable kinds which would be the best adapted for the seed plots and for slipping, and to determine under what conditions

these plantations should be started, so that the chances should be the most favorable for success.

"Up to the present time very few plantations have given convincing results, and as they are a long time in coming to maturity, not producing suitable results for several years, it was thought desirable before commencing, to have fundamental principles well established, and to thoroughly study the nature of the various plants, before using them for replanting.

"The various names of Caoutchouc from the Congo, such as, Kasai, Lopori, Aruwimi, etc., relate to distinct species from which this Caoutchouc is gathered. As they are classed in the same manner according to quality, the buyers are saved considerable trouble, as they know exactly what each quality represents, and they are thus able to buy according to description and through correspondence. The observations which General Galliéni has made in respect to the necessity for the classification of Caoutchouc is very commendable.

"In effect, before the buyers can have confidence in the impartiality of the commission merchant's classification of Caoutchouc, they must in a measure be always able to buy qualities which are the same and regular, so that the delivered products all conform to the designated kinds. This system has great advantages for sellers, who can thus be assured from one day to another, of the sale of their whole output in times of over production and low prices.

"I herewith send you the sales conditions as employed at Antwerp. The method of making sales by inscription is satisfactory to everyone, in that buyers throughout the entire world are enabled to participate in these sales, since we always allow an interval of twenty days between the time of placing the product on the market, and that of making the sale.

"As there have been of late very few lots from Madagascar among the receipts, I regret my inability to send you samples of the varieties, but I shall not fail to do so on the first occasion.

"Copal Gum.—This product, which is beginning to be exported from the Congo in considerable quantities, should likewise be exported from Madagascar. Its good quality (fossil gum), hard and clear, alone merits attention; the young gums have almost no value. Before it is exported, it is desirable to have it thoroughly assorted for the purpose of taking out the defective parts, without which exportation becomes impossible, on account of their small value. This assorting should be done by agents who have a certain knowledge of the article as Copal gum possesses an infinite variety of qualities according to its degree of hardness. The value of good Copal gum varies from 200 to 275 francs per 100 kilograms.

"If any other information should be of use to the colony of Madagascar, I place myself at the entire disposition of the governor to furnish it. Yours truly, EMILE GRISAR."

IN connection with the current charges of corruption in the postoffice department at Washington, questions have been asked regarding contracts to furnish supplies, obtained by persons not manufacturers, sometimes at a lower price than the goods could be made for in the best conducted factories. A postoffice inspector, to illustrate how this might occur, without involving fraud, says: "The rubber pads used by the small offices throughout the country at that time were made in Pennsylvania by women and boys who worked for \$4 and \$5 a week. The New York bidders figured on paying men \$12 to \$15 for the work, as the union schedule provided. I don't say that is the case with all the contracts, but I know that in some of them the bidders shaved pennies."

SPECIFIC GRAVITY IN RUBBER COMPOUNDING.

THE ratio of bulk to weight is of great practical importance in the rubber industry, because it controls the number or pieces or feet per pound obtainable from any given stock. This relation of bulk to weight is dependent on the specific gravity of the material. Its determination presents a constantly recurring problem that the rubber factory superintendent must solve by some means or other if he is to work to the best advantage. The following explanation, it is hoped, will make clear to any who may be unfamiliar with the term what is meant by "specific gravity."

Every material whether solid, liquid, or gaseous has weight or density dependent on its nature or composition. These weights vary through a wide range from the very heavy solids to the lightest gases, taken bulk for bulk. *The specific gravity of any substance is the particular ratio of its weight to that of an equal bulk of another substance, taken as a standard or unit weight.* For all solids and liquids the standard substance of unit gravity is distilled water at the temperature of 62° Fahrenheit. For gases the standard is hydrogen gas at the atmospheric pressure of the sea level.

The following table gives the specific gravities of a few common substances and will be convenient for reference. It will be understood that the figures express averages and are near enough for practical purposes of technical work. The value for each substance is given in terms of water as unity:

SPECIFIC GRAVITIES OF SOME COMMON SUBSTANCES USED IN RUBBER COMPOUNDING.

Antimony sulphide.	4.6	Magnesia.....	3.4
Asbestine.....	2.6	Plaster of Paris....	2.9
Asphaltum.....	1.3	Pumice.....	2.2
Barytes.....	4.5	Red lead.....	8.5
Caoutchouc.....	0.94	Rosin.....	1.1
Fossil flour.....	1.8	Sublimed lead.....	8.0
Graphite.....	2.0	Sulphur.....	2.0
Gutta-percha.....	0.99	Talc.....	2.7
Iron oxide.....	2.0	Tar.....	1.0
Kaolin.....	2.2	Vermilion.....	8.1
Lampblack.....	0.2	Whiting.....	2.8
Litharge.....	9.3	White lead.....	6.2
Lithopone.....	3.6	Zinc oxide.....	5.6

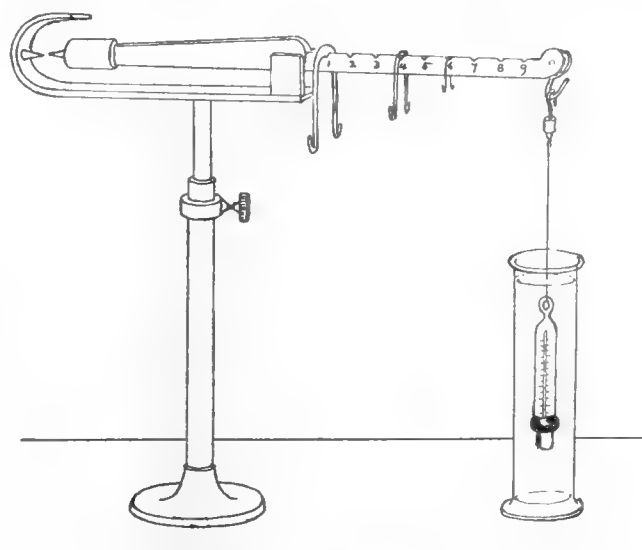
The method of determining specific gravities of solids depends on the fact that any substance immersed in water loses weight equal to the weight of the volume of water which it displaces. The means of ascertaining specific gravities vary somewhat according as the substance under examination is solid, liquid, or a gas. Only those methods will here be given that relate to solids and liquids, since they comprise the extent of the problem for rubber workers. The density of any substance bears the same proportion to the density of water as the weight of the substance bears to the weight of its bulk of water. Hence if the weight of the body, in air, is divided by its loss of weight, when weighed in water, this quotient will represent the specific gravity or comparative density of the body.

The apparatus illustrated and described in this article is designed to afford a ready means of weighing materials in air and water, thus obtaining the data for determining the specific gravity.

Every chemical balance is provided with a hook at either end of the beam for use in suspending a sample to permit its weight to be taken in water, the glass containing the water being placed on a support standing on the floor of the balance case and astride the scale pan.

The Jolly spiral balance, so called from its inventor, is es-

pecially useful for obtaining rapidly the specific gravities of minerals and rubber samples and is really indispensable in rubber works. It consists of an upright supported on a heavy iron base, which is provided with leveling screws to adjust the instrument plumb. Extending the full length of one side of this upright is a mirror upon which is engraved a fine scale of equal parts arranged decimally. Sliding on the upright is a small platform for supporting a glass of water, and adjustable at any height by a thumb screw. Sliding into the upright is a light adjustable wooden rod carrying an arm arranged for holding one end of the weighing spiral of wire which at its lower end hooks to the pans, of which there are two connected together. Three spirals of various degrees of tension are provided with the instrument to regulate its sensibility to heavy, medium, or light materials. Thus set up, as shown in the illustration, with the pans suspended from the medium spiral, allow the lower or glass pan to hang freely in a glass filled with clean water. It is proper to use distilled water, of course, as coming nearer the scientific standard. If such water is not available, clean cool



WESTPHAL'S BALANCE.

water, that has been previously boiled to expel the dissolved air, will answer very well.

To make a specific gravity determination, begin by adjusting the glass of water at such height that the lower pan will be immersed to some point above where its supporting wires meet. Allow the pans hanging free in this way to come to rest, and note the reading on the scale of the height of some fixed point, as the top of the white bead. The scale is engraved on a mirror in order that a level reading may be taken by sighting the point selected for reading with its reflection. Every reading must be made from one reference point. Record this reading taken with the pans empty. Then place in the upper pan a small piece of the rubber or other material to be tested, of suitable size (and any shape). Again adjust the level of the glass so that the pans may hang free and with the lower pan immersed as before. When equilibrium is established note the second reading of the same reference point and record. In precisely similar way determine the reading of the reference point again with the sample in the lower pan immersed. Care must be taken to free the sample of all adhering air bubbles which would otherwise falsi-

fy the reading. Note the third reading and the data will be ready for calculation. These readings represent, in terms of spaces on the scale, (1) the weight of the pans unloaded; (2) the weight of the pans and substance in air; (3) the weight of the pans and substance in water.

The difference between the first and second readings stands for the weight of the sample in air. The difference between the second and third readings represents the loss of weight of the sample in water. Divide the weight in air by the loss of weight in water and the result will express the specific gravity. For solids lighter than water it will be found necessary to close the wires of the lower pan more or less around the sample to keep it immersed.

Another and simpler instrument for obtaining specific gravities of solids is known as the Nicholson hydrometer. This is made of thin sheet metal of hydrometer form, and provided with a set of small weights. It is inexpensive and accurate, but not as convenient to use as the Jolly balance. Above and below the body of the hydrometer are pans for holding the sample. On the stem is a reference mark to which point the instrument is always sunk in the jar of water before each reading is taken. Briefly described, its use is as follows: * Let w_1 be the weight required to sink the instrument to the mark on the stem, the weight of the instrument being w ; to take the specific gravity of any solid substance place a portion of it weighing less than w_1 , in the upper pan, with such additional weight, say w_2 , as will cause the instrument to sink to the zero mark. The weight of the substance, in air, is then $w_1 - w_2$. Next transfer the substance to the lower pan, and again adjust with weight w_3 to the zero mark. The loss of weight of the substance in water is then $w_4 - w_3$. Therefore the specific gravity is obtained by this formula:

$$\text{Specific gravity} = \frac{w_1 - w_2}{w_4 - w_3}$$

For materials in the form of powder the specific gravity bottle is used. This is of various forms, but is essentially a small flask provided with a reference mark on the neck. A fine chemical balance is necessary to make the weights and the procedure is as follows for solids heavier than water: * Weigh the flask filled to the mark with water, then place the substance, of known weight, in the flask, fill to the mark with water, and weigh again. The calculation will be:

$$\text{S. G.} = \frac{(\text{Weight of substance in air}) + (\text{weight of flask and water}) - (\text{weight of flask and water and substance})}{(\text{weight of substance in air})}$$

It will be unnecessary to discuss the methods employed in determining the gravities of substances soluble in water or of gases.

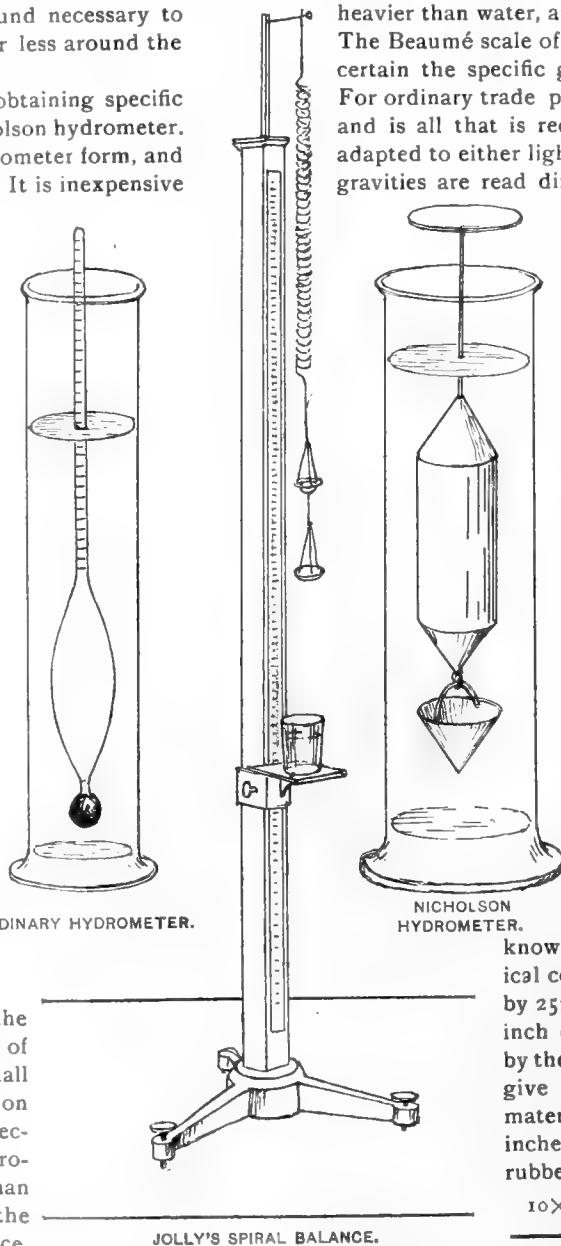
Turning to the consideration of the means of obtaining the gravities of liquids such as acids, oils, naphtha, etc., we have the various forms of hydrometers and the Westphale's balance. There are many specially designed hydrometers adapted to the requirements of certain industries, but in principle they are all alike. They consist of a weighted glass bulb sinking the instrument upright in the liquid and reading the degree, or actual specific gravity, by means of graduations on the stem. The ordinary Beaumé hydrometers are those in general use. Two instruments are required, one weighted and graduated for liquids

heavier than water, and one for those lighter than water. The Beaumé scale of "degrees" is arbitrary and to ascertain the specific gravities a table must be consulted. For ordinary trade purposes the Beaumé degree is used and is all that is required. The Westphale's balance is adapted to either light or heavy liquids and by its aid the gravities are read direct from the weights used without calculation. It is also convenient when only small samples of liquids are available for examination. The balance is so adjusted by the makers that the glass bob will balance the counter weight on the opposite arm when hanging in air. When suspended in any liquid a buoying effect, dependent on the gravity of the material throws the instrument out of balance. The equilibrium is reestablished by means of a set of rider weights. Reading the position on the beam of the weights in the order of their size gives at once the specific gravity sought without calculation.

It should be noted that specific gravity is not to be taken as a test for quality as applied to rubber stocks, but should be considered simply as a guide to the economy of the stock. An other practical application is found in estimating the weight of a proposed article of solid stock when its cubical contents is known. The weight for water of the cubical contents is ascertained by multiplying by 252.5, the weight in grains of one cubic inch of water. This product multiplied by the specific gravity of any material will give the weight of the object in that material. Thus an article of 10 cubic inches volume would weigh, if made of a rubber stock of 1.85 specific gravity:

$$10 \times 252.5 \times 1.85 = 4671.25 \text{ grains} = 10\frac{2}{3} \text{ oz.}$$

A PETITION has been addressed to the governor general of French West Africa by the rubber trade of Bordeaux, asking that measures be taken to prevent the exhaustion of the native rubber vines of the Soudan and adjacent districts, to encourage planting, and to promote improvement of the quality of the present production. It is pointed out that the quality of the Conakry rubbers is satisfactory, and that, by the adoption of similar methods of preparation, other French colonial rubbers could be made as good. Credit is given in this regard to the action of the governor of French Guinea. The petition is signed by twenty rubber brokers, importers, experts, etc.



STEAM TURBINES IN THE RUBBER FACTORY.

BY HERBERT S. KIMBALL, S. B.

THE steam turbine is on the market, and the results of its careful design have proved so successful that one is warranted in making use of this machine. They are installed in various industrial plants, and the number of orders for such machines is astonishing.

While the problem of installing turbines in a rubber factory presents no special difficulties, yet a few cases may be of interest. It might be well to describe the principal features of the steam turbine, and though the writer is more familiar with the "De Laval" machine, he offers the following remarks, which, in general, apply to the various types.

The construction of the machine is simple—in brief, merely the turbine wheel mounted on a shaft, so constructed that the wheel may rapidly revolve around an axis through its center of gravity, rather than its geometric center. If an electric machine, the shaft is connected to the generator by a pair of gears and in case a mechanical drive is wished, an iron sheave or a pulley is substituted for the electric generator. Of course there is a case for the turbine; and other parts of the apparatus that require protection are suitably encased.

The small space necessary, and the need of no special foundation for the turbine, alone are points that immediately attract one; and when a 300 HP. horizontal type steam turbine, mounted on a frame with the generator, requires a floor space of about 15×6 feet, it is readily seen how economical in floor area such a machine is, and how inexpensive the necessary foundation would be.

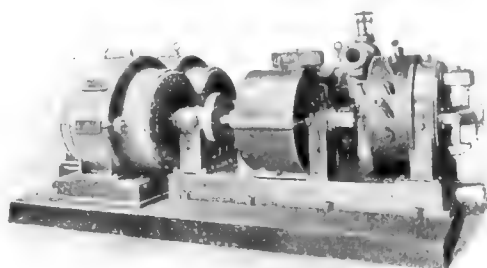
The steam turbine is radically different from the reciprocating steam engine in that, instead of using the expansive power of the steam behind a piston, the steam is expanded in a nozzle, converting the static energy into kinetic; and as the steam impinges against the wheel its great velocity is utilized to revolve the wheel at a tremendous speed.

All the energy in the steam is converted into useful work in the steam turbine, which is not true in a reciprocating engine; and another point in its efficiency is the fact that there is no condensation and reëvaporation, as upon the walls of the cylin-

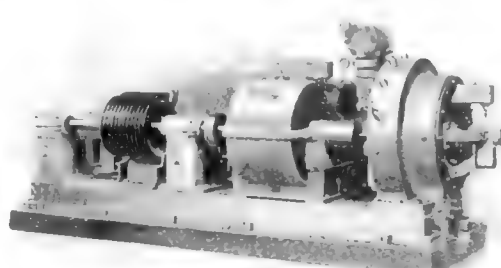
der of the reciprocating engine. It is claimed that with low pressure steam and running noncondensing that the turbine can compete with the reciprocating engine; but for the very best economy the turbine should be operated with high pressure steam and a condenser. A further gain is made by superheating the steam.

It has been proved that the turbine is more economical in its consumption of steam than is the reciprocating engine; and it should be noted that its consumption of steam does not increase to any extent per horse power, as the load decreases. Cost of fuel is an important item, and, considering that the steam turbine is such an economical machine in steam consumption, this fact alone is bound to attract attention.

The speed regulation is all that could be wished, and even with a sudden variation of load the speed will be maintained within very small limits. Oil does not have to be introduced into the machine, and consequently the steam is free from such



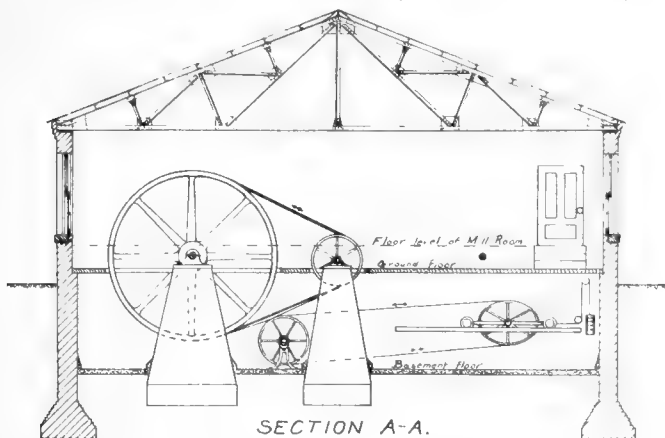
LAVAL TURBINE ALTERNATOR.



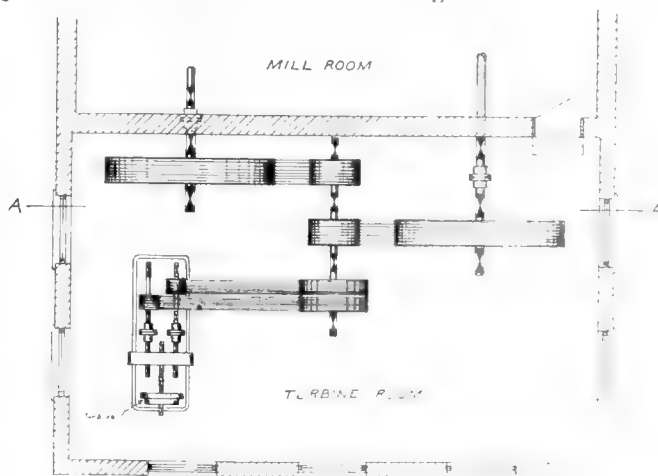
LAVAL TURBINE MOTOR.

contamination, and the condensed steam may be again used in the boilers without purification. Owing to its simple construction, it is predicted, and with good reason, that the life of the machine will be long.

In applying the steam turbine to the rubber factory, either way of furnishing power is suitable—electrically or mechanically. The generator is connected directly to the turbine, and the electric current transmitted to the electric motors on each machine, or group of machines. Should it be deemed best to transmit power by shafting, the rope sheave, which is connected to the turbine, is, by a system of rope drives, connected with the main lines of shafting, which extend from the power house out into the mill. Owing to its speed regulation, the steam turbine is well adapted to operate the crackers and mixers whose loads vary greatly and suddenly. Two accompanying illustrations show a 300 HP. turbine, with iron sheaves, and a 300 HP. turbine connected to an electric generator.



SECTION A-A.



PLAN FOR CONNECTING TURBINE TO MAIN SHAFT LINES BY ROPE DRIVES.

ATTACHING WRINGER ROLLS BY MELTING.

THE old style making of wringer rolls by molding and curing the compound onto the shaft was superseded by the method of building up by hand a calendered sheet of stock on the copperized shaft, cemented and covered by a ply of hard curing rubber to insure a firm union between the iron and the body of the roll. The cure was effected by subjecting the cloth wrapped goods to open steam. This method involved considerable hand labor in building up the roll, but permitted the manufacturer to face the roll with a ply of high grade stock.

Excellent work may be made in this way, but "rolls for the million" are better made by forcing the stock from a heavy tubing machine, delivering it very close to size, or small enough to receive a facing ply, and ready to be cut in two-roll lengths. In this state the double length roll is slipped onto a short mandrel, and rolled in a wide piece of sheeting, which is drawn tightly about it in a small three-roll wrapping machine of the ordinary form. The ends of the wrapper are then tightly tied down to the mandrel, and dozens of such rolls thus prepared are placed, standing endwise, in a rack ready for curing in open heat. After this process, it remains to unwrap and remove the rolls, ready for cutting to length and sandpapering to size on a lathe. It requires some skill to force the uncut rolls onto the tightly fitting lathe mandrels. This is done by resting the mandrel on the floor with the upper end slightly entered in the roll. Then, covering the upper end of the roll tightly with one hand, a sudden downward thrust of the workman's right hand compresses the air in the roll sufficiently to permit it to slip completely onto the mandrel.

The attachment of a cured roll to the shaft is effectually accomplished as follows: The shaft is brought to dull redness its entire length and is then used to melt or burn out the hole in the roll enough to thoroughly smear both hole and iron their entire length with sticky compound. The iron is then quickly quenched in water to a heat below the melting point of the rubber. At this stage the roll is replaced on the shaft and, with a few blows of the shaft on an anvil, jarred down to place. The heat remaining in the shaft is sufficient to cure the roll so firmly to the iron that on cooling it can only be removed by cutting the rubber away. A little practice is necessary to properly judge the heat of the iron after quenching, that it may not continue melting the interior of the roll and produce a cavity or unattached spot. Such a spot would, of course, permit the roll to twist and tear in service. The layer of hard curing cement formed by melting the rubber should be as thin as possible, and the hole not enlarged beyond the size for a snug fit.

This method of attachment is adopted by leading wringer makers for new work as well as by rubber manufacturers for repair work. A few experiments will enable an ordinary mechanic to attach rolls in this way, efficiently and cheaply.

RUBBER FACTORY APPLIANCES.

CURING, STRIPPING, AND REVERSING INNER TUBES.

THE old style method of straight wrapping and cross wrapping inner tubes of rubber was used for many years in every factory devoted to their manufacture. It was at last modified by using a straight wrapper of increased dimensions, and omitting entirely the cross wrapper. This was not only a distinct saving in time and wrappers, but the tube was kept free from all markings and variations in thickness caused by irregular cross wrapping. A still further improvement is now effected by curing the tubes with no wrapping at all. The mandrels are supported on racks to prevent contact

and the tubes come out perfect in every respect.

The removal of inner tubes from the mandrels on which they are cured was formerly very generally accomplished by distending the tube with a large bubble of air and forcing it slowly along the mandrel by hand pressure. The tube thus loosened from the pole slipped off readily, but required to be reversed on a rod by hand to bring outtermost the finished side. [Fig. 1.]

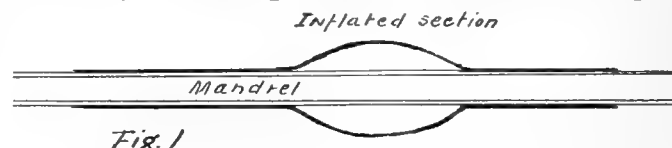


Fig. 1

A far more expeditious method for removing and reversing at one operation consists in turning back upon itself a few inches of the inner tube at one end, and under this reversed portion inserting a strong blast of air as into a pocket. The tube distends and separates from the mandrel at the point of doubling or reversing as rapidly as it can be pulled backward and off the mandrel. [See Figure 2.] Three men can remove and reverse

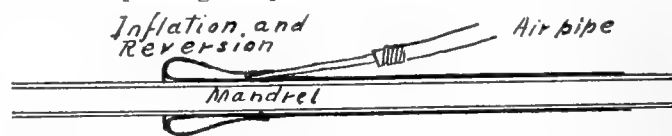


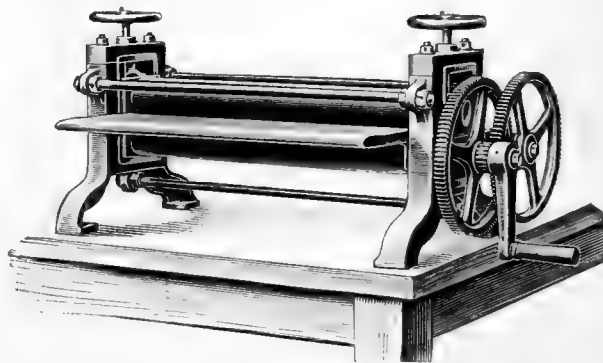
Fig. 2

3000 tubes a day by this method. One man handles the poles before removal of the tubes and one the bare poles, while the third operates the air and strips the tubes. Precisely the same method may be employed for removing and reversing sample cotton hose tubes when cured, as usual on short mandrels.

Reversing flat cured inner tubes is neatly accomplished by employing a hollow pole through which air is being exhausted. One end of the tube is slipped over the air inlet end of the pole. A partial vacuum occurs and the tube is sucked through the pole reversing as it goes. The operator releases his hold and it passes through, making way for the next.

TO IMITATE CUT SHEET.

CUT sheet, or "patent rubber," as the Continentals term it, is notable for a surface crossed by very fine lines that give it a distinctive and attractive appearance. Pure gum sheet produced by spreading in any manner does not normally possess those lines, which, by the way, are caused by the rapidly oscillating knife that shaves the sheet from the pressed block. That



calendered stock may have the appearance of cut sheet, however, the sheeting calender, shown in the accompanying illustration has been designed. It is very simple, having two graven rolls, arranged so that they may be set for different thicknesses of stock. Once through the fluting calender is enough to give the desired surface, which is permanent even after vulcanization. [Max Müller, Hannover-Hainholz, Germany.]

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

THE British rubber manufacturer has comparatively little business with mining companies as far as specialties in rubber goods are concerned. Valves, washers, and rubber belting of the usual types are what are supplied to metal mines by our manufacturers. As far as the belts for

METAL MINING
AND THE
RUBBER TRADE.

Frue vanners and ore conveying are concerned, our manufacturers do not seem to have entered into competition with the Americans. Yet the business must be a large one when we consider the number of vanners working at the present time. Perhaps for the benefit of some who are unfamiliar with mining machinery of the newest pattern I might explain that the Frue vanner is the modern equivalent of the old Cornish buddle, and is naturally of more interest to the rubber trade because it consists essentially of an endless rubber belt some 6 feet wide, the whole vanner being very much of the same size and appearance as an ordinary spreading machine. I am not going into the details of its use, and shall merely remark that the crushed ore falls on the slowly moving rubber belt, together with a stream of water which washes back the gangue while the heavier metallic bodies move along the belt to fall off when it reaches the turning roller at the end of the machine. At one large American mine there are 600 of these Frue vanners in work, so it will be at once seen how large the demand is. I am told that all those in present use in Great Britain are of American origin, and that recent improvements have caused them to have a much longer life than was at first the case. Rubber belts are also largely used in American mines in the hand picking of ores, and the improvements recently made by the Robins Patent Picking Belt Co. have done a great deal to prevent the erosion of the rubber by the metallic particles. It would not be of sufficient general interest to give details about these picking belts; my main object has been merely to draw the attention of British manufacturers to an important branch of the rubber trade which is at present practically monopolized by the Americans. Whether we can attack that monopoly successfully is a matter on which I am not at all inclined to express an opinion, but to those more directly concerned the issues I have touched upon might possibly be studied with advantage.

I WAS shown the other day, a curious substance said to form a deposit of large acreage in New Zealand, and also said by my informant to be a valuable substitute for India-rubber. It could, he said, replace rubber in a mixing without the quality of the rubber being deteriorated. I assured him from a cursory examination of the substance that he must be the victim of illusion. All the same the body is quite a new one to me, and it is conceivable that it might find application in the trade in its strictly limited position as an adulterant. However, I hope to be in a position later on to speak more definitely on the subject.

THIS firm has recently patented a process for impregnating belting with binding material, such as Gutta-percha and Balata, by the employment of vacuum plant.

GEORGE BANHAM & CO.,
LIMITED.

The idea is by thorough impregnation of the textile material to produce an article of even greater utility than the well known belting of Dick of Glasgow. The firm of Banham is chiefly known to fame in connection with the protracted law suits with Reddaway's. The question as to whether Banham's could use the term "Camel

hair" in connection with their belting occupied the various courts up to the final tribunal of the House of Lords, and the verdict was finally gained by Banham's, the judgment being that though "Camel hair belting" referred to Reddaway's product, the term "Banham's camel hair belting" was quite permissible. This judgment has been repeatedly referred to in later years in the various cases where Messrs. Reddaway have brought actions against competitors. Banham's mills, it may be stated, are situated near Messrs. Reddaway's premises.

I UNDERSTAND that a translation of Dr. Weber's book ("The Chemistry of India-Rubber,") into French is being made by Mr. Murphy, manager for Messrs. Torrilhon et Cie., at Clermont-Ferrand, though whether the translation is for private purposes or general sale, is a point on which I have been unable to obtain definite information. A German edition of the same work is now in course of preparation by the author himself.

TECHNICAL
LITERATURE.

MR. CHRISTIAN GRAY, of the Silvertown company, is the new president of this important Institution, and the members will now be in a position to hear something authoritative from the chair when any topic dealing with insulation comes up for discussion.

INSTITUTION OF
ELECTRICAL
ENGINEERS.

FOR the second time this year my correspondence will have to be curtailed owing to pressure of business in England and Continental travel. I am posting this from Madrid, in a tropical atmosphere, and I regret that as far as the rubber trade is concerned, I

RUBBER TRADE
IN SPAIN.

have nothing of interest to impart. I suppose it does sometimes rain in Spain, but since I have been in the country there has hardly been a cloud to temper the sun, and sunshades and fans have been met with to the entire exclusion of macintoshes and goloshes. Madrid, of course, is situated on an arid plateau, over 2000 feet above the sea, and I am far from wishing to convey the impression that the geographical surroundings are typical of the whole of the peninsula. I believe I am right in saying that there is no regular rubber works in Spain, though in the chief commercial town of Barcelona a good business is done in waterproof piece goods. These are specially exported by Manchester houses to be made up into garments at Barcelona. This form of procedure is necessitated on account of the heavy import duties levied on made up goods. Considering the weather I have experienced, I have not ventured to extol the merits of British macintoshes, but in the course of some riding troubles on the slippery mountain paths of the northern mining districts I took the opportunity of recommending the use of rubber frogpads. The horses one rides are exceptionally sure-footed, but it would be both in the interests of humanity and to the enhancement of the riders' safety if the innovation I have suggested were adopted. If this procedure is adopted on town pavements, it seems all the more desirable where a slip on the iron bound ground means going over a precipice. I may mention that rubber flooring is largely utilized in Spanish trains; I noticed the difference at once on changing trains at the frontier. To end with a generality, there is plenty of evidence that since the American war, Spain, one of the richest countries in the world from a metalliferous standpoint, is rapidly developing her commerce and the demand for mechanical rubber goods in connection with engineering and mining will undoubtedly show a great increase.

RECORD OF RUBBER CULTURE.

RUBBER PLANTING IN THE FAR EAST.

AN estimate of the extent of rubber planting (mainly *Hevea*) in Ceylon has been made lately by the publishers of *The Tropical Agriculturist* for their "Ceylon Handbook and Directory, 1903-04," from which the following details are derived. The acreage, by districts, is indicated by the figures in the margin

	ACRES.
Kelani valley.....	4,100
Kalutara.....	2,357
Minor low country districts.....	2,700
Udagama.....	242
Kuruwita.....	219
Dumbara.....	366
Matale.....	481
All other.....	1,165
Total.....	11,630

herewith. The compiler believes the number of rubber trees to reach 3,500,000 or 4,000,000, of which more than half have been planted within two years. It is difficult, however, to determine the number of trees from the acreage planted, for the reason that no uniform rule exists with regard to the distance apart in planting. Besides, more than half the acreage referred to represents the planting of rubber among tea, in which case a considerably smaller number of trees per acre is set out.—For the Straits Settlements (including the Federated Malay States) *The Tropical Agriculturist*, with the assistance of data supplied by Mr. Donald Mackay, estimates a total of about 3,000,000 rubber trees, of which probably 100,000 are five years old or over.

	ACRES.	TREES.
Selangor.....	10,000	2,000,000
Negri Sembilan..	1,500	310,000
Perak.....	300	50,000
Wellesley.....	3,000	500,000
All other.....	1,800	300,000
Total.....	16,600	3,160,000

Their distribution is indicated by the marginal figures. The members of the United Planters' Association of the Federated Malay States report their total planting of rubber at 9430 acres, with 1,352,547 trees. Outside of their returns, the same difficulty exists as in the case of Ceylon in making accurate estimates of the number of trees per acre.—Mr. Cyril E. S. Baxendale, writing encouragingly of the prospects of rubber planting in the Malay states, says that there healthy Pará rubber trees at the age of 4½ years measure 35 to 40 feet in height, and as large as 33 inches in girth 3 feet from the ground.

SANTA TERESA PLANTATION CO.

[Plantation "Santa Teresa," near Tierra Blanca, canton of Soyaltepec, state of Oaxaca, Mexico. Office: Dubuque, Iowa.]

INCORPORATED August 19, 1903, under Iowa laws; capital authorized, \$500,000, in \$10 shares; own 2632 acres on the river Chichicasapa, near the Vera Cruz and Pacific railway; the object is to plant rubber as their ultimate principal resource, though other crops will be planted while the rubber is developing, and attention will be devoted to grazing. Officers: Henry C. Reeche, president; J. M. Fritz, secretary; W. C. S. Coy, treasurer—all business men of standing in Dubuque. The financial plan involves the sale of full paid shares from time to time, as the capital may be needed in the development work.

THE COSONEZ PLANTATION CO.

[Plantation in canton Tuxpam, state of Vera Cruz, Mexico. Office: 1028 Citizens' building, Cleveland, Ohio.]

INCORPORATED under the laws of New Jersey; capital, \$200,000, in common stock. Have purchased 2000 acres, on the Cosonez river, 15 miles from the gulf coast, of which 500 acres have been cleared; some rubber, vanilla, and coffee had been planted by the former owners. The company purpose making rubber their principal interest ultimately, 1000 acres to be devoted to this production. The company expect to derive considerable rubber from wild trees still standing on their unimproved prop-

erty. The company offer for sale 5 per cent. gold bonds to provide additional development capital. Henry A. Griffin is president, A. B. Marshall treasurer, George Hodges secretary, and A. B. Nichols manager—all citizens of Cleveland, Ohio.

LA ZACUALPA PLANTATION CO.

[Plantation near Tapachula, state of Chiapas, Mexico. Offices: No. 713 Market street, San Francisco, California.]

IN the preface to a recent publication by the United States department of agriculture—Mr. O. F. Cook's report on "The Culture of the Central American Rubber Tree"—it is stated: "A large proportion of the notes and illustrations used in the present paper were secured in the Soconusco district of southern Mexico on the estate of the La Zacualpa Rubber Plantation Co., through whose hospitality and numerous courtesies the work of Mr. Cook was greatly facilitated." It is understood, of course, that Mr. Cook did not attempt a complete survey of the work being done in Mexico in rubber culture, and in stopping at the La Zacualpa plantation, on his way north from Central America, his object was to reach one of the oldest plantations in Mexico, and one on which rubber had actually been produced and marketed from cultivated trees. On page 13 of his report Mr. Cook writes: "If no other evidence were obtainable, the planted trees visited in Soconusco would prove that rubber can be produced in cultivation." On page 76 he writes: "The planted trees at La Zacualpa abundantly demonstrate the practicability of rubber culture," though he adds that they do not wholly settle the question of the amount of yield, since no care was taken, by the former owners of the plantation, to record the amount of rubber actually secured from the trees. Twelve of the eighteen plates which illustrate the report are based upon photographs taken at the La Zacualpa plantation.

PLANTING "CEARA RUBBER" IN NICARAGUA.

REFERENCE has been made in earlier issues of this paper to the experiments in planting *Manihot Glaziovii* (the rubber tree of Ceará, Brazil), undertaken near La Paz, in Nicaragua. The enterprise mentioned was the plantation "La Victoria," controlled by the Messrs. Adler, of Waltham, Massachusetts. [See THE INDIA RUBBER WORLD, November 1, 1902—page 57, and December 1, 1902—page 80.] A prospectus now at hand relates to another plantation—El Trionfo—under the same management, and in the same location, also being stocked with *Manihot*, and in which outsiders are invited to become interested. A letter to THE INDIA RUBBER WORLD announces: "Our business, although not strictly private, is not of a stock selling nature, as we sell the actual land." Alfred C. Adler resides at Waltham, and George Adler and Frederick Wagner, in charge of the planting, at La Paz.

RUBBER PLANTING COMPANY PUBLICATIONS.

BOSTON Tropical Co., Boston, Massachusetts=[Prospectus]. 32 pages and map.

Santa Teresa Rubber Co., Dubuque, Iowa=Rubber, Sugar Cane, and Cattle in Tropical Mexico. 20 pages.

Mexican Mutual Planters' Co., Chicago, Illinois.=Report of the President to the Bondholders, September, 1903. 23 pages.

The Cosonez Plantation Co., Cleveland, Ohio.=[Prospectus]. 24 pages.

Mexican Gulf Commercial Co., Kansas City, Missouri.=The Dios Rios Properties, Illustrated. [A handsome album of views, including illustrations of rubber planting.] 56 pages.

THE GERMAN RUBBER WORKMAN ABROAD.

BY A WRITER IN THE "GUMMI ZEITUNG."

THIS subject has received but little attention, and therefore I desire to enter into its inner details. Not enough publicity is given to what the German rubber worker has to go through in foreign countries. How often has it occurred that German workmen, allured by dazzling wage conditions, have left their homes full of hope, and after many disappointments and much suffering have returned to Germany to commence anew. In place of their former permanent situation, which they abandoned to go abroad, they will have to take any sort of position in order to obtain employment again. But we do not mean to say that it is ill advised to take positions in foreign rubber factories at all, many workmen having made a fortune abroad. Especially the young men should take advantage of such offers and gain experience and knowledge and a broadening of their views in general by coming in contact with foreign work, peoples, and customs. But the older and married workmen, whose whole existence and that of their families depends upon a good situation, should be very careful in accepting a position abroad.

Further on I will give a few instances which I have personally observed. It is generally known that the German rubber workman is held in high favor in foreign countries, on account of his persistency, capability, and energy, but these very accomplishments lead them often to assume a rather independent attitude toward the factory management, oftentimes terminating disastrously to themselves. I could mention many cases where the workman himself was alone responsible for the failure to realize his anticipations.

Only such workmen should accept foreign positions as are thoroughly competent to manufacture the various articles independently; for instance, if a workman accepts a foreign position as hose maker, he must be positive that he is skilled in the making of the various kinds of hose, from the ordinary garden hose to those used for pressure with two or three spirals for hydraulic presses.

In many of the smaller factories in foreign countries it is necessary for a workman to draw his own sheets, which he never did in Germany, where every rubber factory has a competent calander master, who attends to that and also supervises the mixing machinery.

I am acquainted with several foreign rubber factories which employ at the most from 15 to 20 men, each working independently, attending to all details—a special superintendent not being employed—the owner of the factory filling that position himself, but in many instances he has no practical knowledge of the work. The workmen have to attend to all the details pertaining to the washing, mixing, and calandering machines, and produce whatever goods demanded, such as air hose, pneumatics, sheets, valves for steam pumps, bottle stoppers, brewery and water hose, etc., from A to Z, wholly by themselves. A foreign friend of mine owns a small factory of this kind, and once having large orders for pneumatics, he requested me to furnish him several skilled rubber workers. He paid good wages and I gave him the names of some able workmen, and they entered his employ. The manufacturer in question was well satisfied with their work, but at the end of the season those well paid men were discharged, and remained without employment during the whole winter, this branch of work being almost at an entire standstill.

A similar case occurred abroad a few years ago. A foreign rubber manufacturer came to Germany and engaged five competent workmen—two hose makers, one pressman, and two for

pneumatics. They received high wages, but no contracts were made, and after working six months with good results two of them were discharged and the other three remaining in the factory had to submit to a material reduction in wages in order to hold their positions. The two discharged workmen had large families and appealed to the foreign trade court, which compelled the manufacturer in question to furnish transportation for them, their families, and belongings back to Germany, at his own expense. Their preference for foreign work no doubt was thoroughly cured.

Another foreign rubber factory (a stock company) engaged a German director on two months trial. This director, not being conversant with the foreign language, supplied himself with several skilled German workmen. At the end of two months he was dismissed and with him, naturally, the German workmen employed by him. Therefore I would advise every German rubber worker to be extremely careful in accepting a position abroad.

There are instances, as already mentioned, where German workmen, by means of their capability, have attained positions as foremen, enjoying permanent positions at good salaries; and, in order not to end this recital so sorrowfully, I will mention such a case. A few years ago a skilled German rubber worker accepted a position abroad, through a notice in the *Gummi-Zeitung*. He received at first 50 pfennigs [=12 cents] per hour, and now has already advanced to a monthly salary of 250 francs [= \$48.25]. Such chances, of course, rarely occur, and must not be taken as a standard.

Generally, workmen are ignorant of the fact that in foreign countries no institutions for the welfare of workmen exist, such as sick benefit funds, invalid and old age insurances; and in the event of sickness overtaking them they simply earn nothing and are obliged to pay for the doctor and medicines out of their savings, that is, if they have them.

INVENTORS IN AKRON RUBBER FACTORIES.

FROM THE AKRON TIMES-DEMOCRAT.

AKRON is a great city of inventors, according to one who has been brought in touch with many of them. Not only are there native Akronians who are inventors and who are working out their own ideas here, but Akron's many great mechanical enterprises have drawn men with new ideas from many other places to exploit them here. It has become so now that every big factory has its own corps of inventors and experts, who are well paid to experiment all the time, seeking new ideas which may entail economy of production and greater profit to their employers.

Especially has this been true in the rubber factories, where machinery has come, within the past very few years, to do the work that had formerly been done by hand. The improvements that have made the Akron factories the most complete and modern in the world have also made Akron rubber manufacturers able to make lots of money in spite of the competition that has been steadily growing all these years. Not only have the professional inventors been the life of the rubber business, but they have also helped in each and every other mechanical enterprise in the city which has proved successful.

THE Amazon Telegraph Co., Limited, proposes, if permitted to raise its rates, to lay a duplicate cable between Pará and Manáos. In view of the peculiar difficulties of maintaining telegraphic service on the Amazon, frequent breakages have occurred in the existing cable, and it is hoped that with two cables a continuous service can be maintained.

RUBBER INDUSTRY IN NEW JERSEY.

FROM the three last annual reports of the bureau of statistics of labor and industries of New Jersey—the latest of which has just appeared—have been compiled the following details regarding the India-rubber industry in that state. The annual reports from this New Jersey office steadily gain in completeness, and it is believed that the returns here given cover practically the whole rubber industry of New Jersey. It will be noticed that in every respect the industry shows a growth, year by year—in the amount of capital invested, the value of materials used, wages paid, employment of labor, value of product, and so on. The points upon which the reports might be more explicit are the classification of raw material used and of the goods produced.

	1901.	1900.	1899.
Number of establishments.....	30	31	33
Total capital employed.....	\$ 7,144,745	\$ 7,129,582	\$ 6,700,548
Total value of materials used.....	\$ 9,522,713	\$ 8,548,497	\$ 8,205,344
Crude rubber.....	\$4,250,078	\$4,949,833	\$4,742,778
Scrap rubber.....	512,493	966,854	684,352
Cotton goods.....	912,916	791,218	
Compounds.....	1,800,110	80,565	2,778,214
Other materials.....	2,009,206	1,766,027	
Total amount paid in wages.....	\$ 1,901,890	\$ 1,811,521	\$ 1,739,918
Total selling value of products.....	\$14,421,245	\$13,239,328	\$12,441,996
Boots and shoes.....	\$1,583,385	\$1,887,931	\$1,904,961
Rubber tires.....	165,436	594,782	549,440
Reclaimed rubber.....	568,260	958,013	871,539
Belting and hose.....	7,230,289	5,649,807	
Mechanical goods.....	810,150	807,415	
Druggists' goods.....	316,986	671,289	
Stationers' goods.....	364,822	376,572	9,116,036
Molded goods.....	—	283,600	
Emery wheels.....	160,255	126,565	
Other goods.....	3,221,667	1,883,354	
Number of private firms.....	—	—	2
Number of partners in firms.....	—	—	4
Number of corporations.....	30	31	31
Number of shareholders in corporations.....	4,039	4,361	356
Number of female shareholders.....	75	92	75
Number of banks as shareholders.....	12	14	—
Average capital invested by partners.....	—	—	\$50,000
Average invested by shareholders.....	\$1,769	\$1,655	\$18,260
Average capital per factory.....	\$238,158	\$229,664	\$203,047
Average materials used per factory.....	\$317,424	\$275,759	\$248,044
Average products per factory.....	\$480,708	\$427,075	\$377,030
Average wages paid per factory.....	\$65,396	\$59,081	\$52,725
Smallest number of employes.....	4,151	3,628	3,619
Largest number of employes.....	4,550	4,310	4,296
Total average number of employes.....	4,322	4,015	4,034
Average number of male employes.....	3,570	3,307	3,312
Average number of female employes.....	752	708	722
Average number of employes per factory.....	144	130	122
Average earnings per year per employe.....	\$453.93	\$451.16	\$431.31
Average number of days in operation.....	287.33	285.39	280.27
Average hours of work per day.....	9.93	9.26	9.97
Proportion of business done to capacity.....	82%	82.42%	81.97%

On the whole the rubber industry makes a better showing with regard to the proportion of business done to total capacity, and in regard to the extent of returns of capital, than the other industries in the state. As classified in these reports, there are eight industries having more capital invested than rubber, but only five use materials of greater value and only six report a greater value of products.

THE PREPARATION OF CRUDE RUBBER.

A LACK of uniformity in crude rubber of any given grade often serves to perplex the most experienced factory superintendent. It may be due to the different treatment, at different times, of the *latex* of the same kind of tree, or to the care or lack of care given to the rubber in storage or transportation. Perhaps, again, it may be due to the admixture of the *latex* of different species in coagulation. Bearing upon the latter view are recent comments by two widely separated observers, as follows:

Herr Ernst Ule, writing in the *Notizblatt* of the Berlin bo-

tanian gardens, in regard to rubber gathering on the river Purús, in Brazil, says: "The quality of rubber depends very much upon the mixture of the various kinds of *latex*. The *latex* of *Sapium*, for instance, is seldom collected alone, but poured into one vessel with the *latex* of *Hevea Spruceana* and that of the genuine rubber tree, *Hevea Brasiliensis*."

A writer in *Le Moniteur du Caoutchouc* (Brussels), on the rubber trees of central Africa, says: "It is not without interest, with regard to the *latex* of *Ficus*, to draw the attention of managers of trading stations to the great danger from mixing it with that of other species in coagulation. The mixing of *latex* of *Ficus* and of *lianes* (creepers) is especially disastrous. In fact, the *Ficus* product will ruin the *liane* rubber by causing an obnoxious fermentation. The organic decomposition of much African rubber has no other cause." He urges that managers

of rubber camps, on finding rubber yielding trees with which they are unfamiliar, should, before mixing the product with any other, send samples of the *latex* to Europe for examination, after hermetically sealing it and adding a few drops of ammonia to prevent coagulation on the way.

Hitherto the rubber manufacturer has had to be content with buying such rubber as the market afforded, with no knowledge of how it had been prepared, and with forcing it to give the results desired. It is not impossible that in time manufacturers will be able to buy rubber fully authenticated as to the source of the *latex* from which it was prepared and the method of coagulation employed. It will then be possible for a manufacturer to order rubber specially prepared, from managers of rubber camps with an established reputation, with some assurance that the exact quality wanted will be forthcoming.

WHERE THE CATALOGUES WENT.

THE story of the capture of an imaginary business contract, in one of the South American republics, told in the New York *Evening Sun*, makes a mention of an effort to do business by sending out catalogues, which doubtless may have been duplicated in real transactions. According to the story, the United States consular agent at a certain point, calling at the office of a local dignitary, "General Badojoz," got an inkling that certain supplies would be required, and a little later the advance sheets of the United States Consular Reports gave notice of the fact.

"The same day eighty-three manufacturers wrote this consular agent that they were sending their catalogues to him under separate cover, and that their goods were without doubt the best on earth. The consular agent was requested to place this valuable data into the hands of parties interested. The long suffering consular agent paid the overdue postage, and placed the printed matter in the hands of Badojoz. Badojoz placed it in his waste paper baskets. His janitress rescued it and placed it in the hands of her brother, who kept the little butter shop. Her brother wrapped up his butter in it and placed it in the hands of his customers, who admired the magnificent glazed paper and wondered what the dickens the printing was all about. Badojoz's janitress's brother's customers thus became the parties interested."

The above writer omits to state that the catalogues, being in English, had no meaning for those who received them.

NEW GOODS AND SPECIALTIES IN RUBBER.

THE U. S. A. LIQUID PISTOL.

THIS is really the liquid pistol first introduced to the public under the name "Son of a Gun," but so improved that its predecessor has now been withdrawn from the market. In the "U. S. A." pistol the reservoir is an oval bulb of rubber that fills the hollow in the pistol handle.

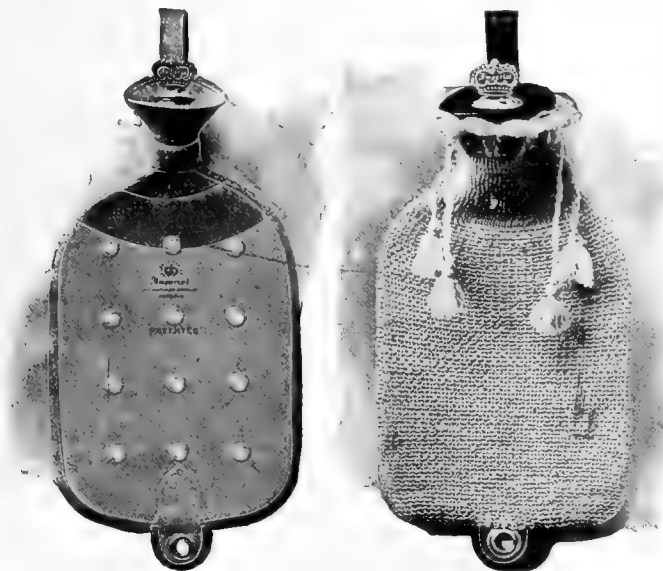


U. S. A. LIQUID PISTOL.

Connected with the trigger is a spoon valve that does all of the firing and recharging. The same principle was involved in the pistol as formerly made, but the bulb was then exposed to wear and tear, whereas it is now fully covered and protected by the metal handle. In its present form the pistol should last a life time, as there is nothing to get out of order. For pedestrian, bicyclist, or automobilist it is a first class discourager to dogs or tramps, even if loaded with water only, but if the charge be diluted ammonia or tincture of red pepper it is remarkably effective. The capacity of the pistol is twenty charges without refilling. It is five inches long, finished in nickel. [Parker, Stearns & Sutton, No. 222 South street, New York.]

A NEW HOT WATER BOTTLE.

A SPECIAL feature of the hot water bottle illustrated on this page is the even distribution of its contents, due to the novel form of construction. The side walls of this bottle are united at intervals by eyelets, said eyelets consisting of short lengths of a tube made of the same material as the body of the bag,



NEW HOT WATER BOTTLE.

with the edges of the eyelet or tube rounded over and adherent to the side walls and arranged to unite therewith during the process of vulcanization. One of the accompanying cuts shows the hot water bottle with a knit cover and another the bottle without the cover. The article has recently been patented and is understood to have met an encouraging reception in the trade. [The Goodyear Tire and Rubber Co., Akron, Ohio.]

THE ACHILLES EXERCISER.

THE new article herewith illustrated is made of rubber alone and combines simplicity, durability, noiselessness, and convenience. When folded up it takes up about as much space, in the words of its inventor, as an apple. It can be packed conveniently into any grip, and can be used anywhere and at any time. There are no wires involved in its construction, no pul-



ACHILLAS EXERCISER.

leys to put up, no screws or hooks to deface walls or furniture. Moreover, it is a practical device. It is adaptable for a long list of exercises, admitting the arms or the feet through the rings, while the middle connection will stretch to any desirable length. The inventor is Mr. Franklin C. Holmes, of Los Angeles, California, and patents have been applied for. [The Goodyear Tire and Rubber Co., Akron, Ohio].

THE HICKS DRESS SHIELD.

THE illustration represents the trademark adopted for a new pure gum dress shield made by the Canfield Rubber Co. (Bridgeport, Connecticut) and named for the president of that company, the Hon. Ratcliffe Hicks. These shields are made by a new process patented in the United States and Europe, and have withstood successfully severe tests under various temperatures and degrees of moistures. They are not only light in weight but durable and odorless, and can be washed and ironed with a hot iron.



THE RUBBER FACE MASK.

It has been the general belief that a face mask of India-rubber was something that was sold chiefly to ladies who desired to enhance whatever beauties of complexion nature had favored them with. It seems, however, that this is far from the truth. The rubber mask is used to-day by expert dermatologists in removing the pittings of smallpox, in the following manner: The face is first antiseptically cleaned. Then a lotion made from bichloride of mercury, carbolic acid, glacial acetic acid, or corrosive sublimate, is rubbed into the skin thoroughly. The patient is then sent home to rest until the next day. The following day shows the face red, inflamed, and blistered. A second lotion is then applied, and the face then covered with a rubber mask. The patient is afterward kept in retirement for from six to twelve days. During this period suppuration goes on, the old skin is wholly destroyed, and a new skin revealed—pink, soft, and smooth. Further than this, it is claimed that in ordinary use the toilet face mask, made of



RUBBER FACE MASK.

fine pure rubber, and conforming easily to the features, will remove tan, freckles, sallowness, redness, discolorations, and the like. [The Canton Rubber Co., Canton, Ohio.]

AUTOMOBILE TIRES WITH "FRICTION PLUG."

VARIOUS applications of the Foster "friction plug" have been illustrated in these pages, and there is now to be added

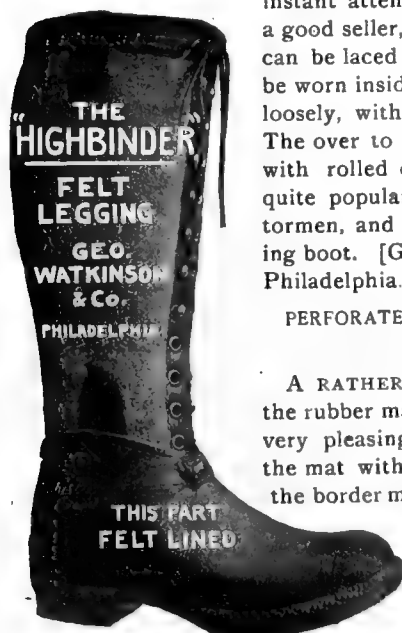


the use of this principle in rendering automobile tires non-slipping. Besides, the use of the friction plug renders the tire less liable to puncture. The friction plugs are placed on the outer surface

of the tire about $\frac{1}{2}$ inch apart, and are raised slightly so as to take the wear from the rubber. [The Elastic Tip Co., No. 370 Atlantic avenue, Boston, Massachusetts.]

THE "HIGHBINDER" FELT LEGGING.

A FELT boot that is new in very many respects, that attracts instant attention, and that is already a good seller, is the "Highbinder." It can be laced tightly to the leg so as to be worn inside of the trousers, or more loosely, with the trousers leg inside. The over to which it is fitted is duck, with rolled edge and tap sole. It is quite popular among farmers and motormen, and makes an excellent hunting boot. [George Watkinson & Co., Philadelphia.]



PERFORATED MATS WITH MOLDED BORDERS.

A RATHER unusual combination in the rubber mat line, but one in which very pleasing effects are obtained, is the mat with a perforated center and the border molded. Of course the perforated portion can be

made in any of the usual designs, while the border may be in black, white, or red. Made in three sizes — 18 × 31,

18 × 36, and 20 × 40 inches. [Perfection Rubber Co.—John J. Cook, No. 923 South Clinton avenue, Trenton, New Jersey.]

THE SHERMAN HOSE COUPLING.

HOSE coupled as in the illustration herewith has withstood a water test of over 600 pounds without leaking. The Sherman coupling, being made from sheet brass, is free from sandholes and such like defects. The double knurled flanges on the nut afford a fine grip for the hand, full waterway, and deep corru-



SHERMAN HOSE COUPLING.

gations for imbedding into the lining of the hose. Other advantages are that there are no soldered joints and all the parts are seamless. In addition to the marking "Sherman Coupling,"

this device is also labeled "Licensed under Benedict & Burnham patents." [H. B. Sherman Manufacturing Co., Battle Creek, Michigan.]

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of August, 1903, and for the first eight months of the calendar year, for five years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
August, 1903.....	\$ 94,113	\$166,105	\$ 195,442	\$ 455,660
January-July.....	474,684	341,792	1,459,954	2,276,430
Total, 1903.....	\$568,797	\$507,897	\$1,655,396	\$2,732,090
Total, 1902.....	459,871	524,629	1,298,132	2,282,652
Total, 1901.....	398,917	394,397	1,203,086	1,996,310
Total, 1900.....	359,340	350,286	1,000,839	1,710,965
Total, 1899 (a) ..	110,604	169,688	1,024,206	1,304,498

(a) Included in "All Other" prior to July 1, 1899.

Exports of reclaimed rubber for the first eight months of 1903 amounted in value to \$287,564, against \$254,375 for the same period in 1902, and \$239,246 in 1901.

RUBBER SHOES IN CHINA.

A REPORT by the British acting consul at Wuchow says: "The import of rubber boots and shoes increased last year by 2,000 pairs; the favorite make is marked as being of Scotch origin, but it is more than probable that this shoe, as well as a *soidisant* Russian boot, comes from Japan. Current retail price: boots, 3s. 6d. per pair; shoes, 3s. per pair. These boots and shoes are of native pattern, but they would be more acceptable if the soles were made at least $\frac{1}{4}$ in. thick, similar to the ordinary Chinese shoe. The native does not wear these articles as goloshes over his own shoes, but instead of them, and hence a light India-rubber sole does not afford sufficient protection to the foot in a country where there are no roads and street pavements consist principally of broken brick and stone." —With all respect to the official quoted above, it is extremely improbable that the rubber footwear he mentions was made in Japan.

CHARLES GOODYEAR TWICE SURPRISED.

THE discovery of the process of vulcanizing India-rubber was recently attributed, by the Waterbury (Connecticut) *Republican*, in an article quoted in these pages, to Mr. Goodyear's accidental throwing of a handful of sulphur into "a cup of melted rubber." But perhaps the able Newburyport (Massachusetts) *News* knows more about the matter. Writing of Charles Goodyear's experiments the *News* says:

Luck helped him twice. Once, when painting a picture, a bit of his sulphuric acid fell on crude rubber, and he was surprised to notice that it hardened the rubber. A few years later, while telling about rubber in a Woburn grocery store, a bit of it fell on the hot stove, and it vulcanized. Goodyear was amazed to discover the keynote of the process he had so long sought, and he went madly at work again. To carry on his vulcanizing experiments, he used his wife's cook stove oven, after his wife had baked bread, and the boilers of manufacturers, after the workmen had gone home.

The whole thing is plain now. At one time he found that sulphuric acid hardened rubber; several years later he found that dropping a rubber on a hot stove hardened rubber. He had only to put one and one together—and he had vulcanization. It must have been "luck" that enabled our contemporary to know so much.

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED SEPTEMBER 1, 1903.

NO. 737,695. Soft tread horseshoe. C. H. Beardsley, Fremont, Ohio, assignor of one half to C. Gibson and W. D. Totten, Detroit, Michigan.

737,697. Collapsible tube for fountain pens. W. Bolles, assignor of one half to J. L. Chase, both of Toledo, Ohio.

737,698. Golf ball [with core composed of elastic thread or bands wound under tension]. C. E. Boutwood, Hinsdale, Illinois.

737,702. Tire [solid rubber, for vehicles; with base and tread portions of differing degrees of compressibility]. E. B. Cadwell, New York city.

737,745. Felly for vehicle wheels [with which is connected a pneumatic tire and means for retaining the same]. R. Kronenburg, Ohligs, Germany.

737,751. Fabric [comprising a plurality of layers of pliable vulcanized material containing fire resisting ingredients in a portion of said layers, said layers being of varying degrees of hardness]. Amanda M. Lougee, Boston, Massachusetts.

737,773. Playing ball. F. H. Richards, Hartford, Connecticut.

737,774. Playing ball. *Same*.

737,795. Syringe pipe. V. C. V. Wood, New York city.

737,816. Elastic tire for vehicles. W. Balassa, Vienna, Austria.

737,845. Horseshoe [with elastic tread]. E. H. Jackson, Colvinrun, Virginia.

738,009. Medicine applicator [with collapsible retainer]. H. N. Dews, Portsmouth, Virginia.

738,064. Vehicle tire [pneumatic, of the clincher type]. Adolf Prinzhorn, of the Continental Caoutchouc- und Guttapercha-Co., Hanover, Germany.

ISSUED SEPTEMBER 8, 1903.

738,175. Girdle for supporting garments, Lillian Fagan, Columbia Falls, Montana.

738,235. Smoking pipe [with corn cob bowl and a stem of rubber tubing]. I. Pfortner and G. A. Pfortner, New York city.

738,250. Flexible tubular covering. J. Stanley, Newark, New Jersey.

738,544. Hotwater bottle. F. H. Jones, Wakefield, Massachusetts, assignor to Tyer Rubber Co.

738,566. Vehicle tire and method of manufacturing same. C. B. Nirdlinger, St. Louis, Missouri.

738,593. Auriphone [being a mouthpiece and an earpiece connected by a flexible tube]. L. M. Atkinson, Rockport, Indiana.

738,603. Syringe nozzle. H. Brown, London, England.

738,639. Cushion tread horseshoe. A. A. Spadone, New York city.

Trade Mark.

41,074. Rubber heels for boots and shoes. P. W. Miner & Son, Batavia, New York. *Essential feature*—"Treadeasy." Used since February, 1896.

ISSUED SEPTEMBER 15, 1903.

738,839. Fountain pen for recording machines. O. C. Patton, Denver, Colorado.

738,859. Fountain pen filling device. H. Taylor, St. Paul, Minnesota.

738,876. Fountain pen. J. Barnes, assignor to W. F. & John Barnes Co., both of Rockford, Illinois.

739,025. Inner tube for pneumatic tires. T. R. Palmer, Jeannette, Pennsylvania.

739,053. Vehicle wheel [including flexible tire]. L. Biava, New York city.

739,097. Hose or tubing. F. M. Marcy, Worcester, assignor of one half to G. O. Draper, Hopeville, Massachusetts.

Design Patent.

36,558. Tiling. R. L. Chipman, Akron, Ohio. Term of patent 14 years. ISSUED SEPTEMBER 22, 1903.

739,658. Vehicle wheel [with rubber cushion tire.] G. D. Dryden, Chicago, Ill.

739,720. Fountain pen. J. G. Rider, Rockford, Illinois.

739,753. Playing ball [comprising a springy hollow core, a hard shell of plastic material, an intervening layer of soft rubber, and a metal layer embedded in said soft rubber layer, all enclosed in a shell of Gutta-percha]. E. Kempshall, Boston, Massachusetts.

ISSUED SEPTEMBER 29, 1903.

739,826. Antiskidding device for vehicle wheels. S. Butler, Westbury-on-Tyrm, England.

740,069. Vehicle tire. W. O. Worth, Chicago, Illinois.

740,142. Heel for boots or shoes. J. C. Hale, Alexandria, Scotland, assignor to R. M. Howison, London.

740,148. Horseshoe pad [consisting of layers of fibrous material cemented together by a waterproof material]. A. Larsen, Chicago, Illinois.

740,184. Antiskidding device for vehicle wheels. W. D. Sainsbury, Dublin, Ireland.

740,278. Rocking chair attachment [a rubber strip for the under side of the rocker]. W. E. Howe, Talladega, Alabama.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD offices at 10 cents each, postpaid.]

THE BRITISH PATENT RECORD.

[* Denotes Applications from the United States.]

APPLICATIONS—1903.

18,244. Constance Campione, London. Dress shield. Aug. 24.

18,249. G. Sutton, London. Means for molding hollow objects in plastic material (E. J. LeComte, Mexico). Aug. 24.

18,365. J. S. Fairfax, London. Elastic air pressure balls (S. A. Tidey, Switzerland). Aug. 25.

18,385. P. A. Martin, Birmingham. Means of manufacture of golf balls. Aug. 26.

18,483. W. R. Amos, London. Hose coupling. Aug. 27.

18,635. J. W. R. Scriven, Bradford. Pneumatic tire cover. Aug. 29.

18,636. W. Buttery, Bradford. Tire for cycles and motors. Aug. 29.

18,664. R. J. Routledge, London. Tire for motor cycles and motors. Aug. 29.

18,671. W. H. Chapman, London. Puncture preventing device for tires. Aug. 29.

*18,716. A. A. Waterman, London. Fountain pen. Aug. 31.

18,770. C. E. Boutwood, London. Golf ball. Aug. 31.

18,845. H. C. Berger, London. Resilient protective covering for pneumatic tires. Sept. 1.

18,876. D. P. Goodwin, Birmingham. Tire for motor and other vehicles. Sept. 1.

18,937. W. R. Ormandy, Liverpool. Method of manufacture of rubber tires for vehicles. Sept. 2.

18,996. E. W. Warriner, London. Fountain pen. Sept. 3.

19,001. J. S. Campbell and A. H. Atteridge, London. Golf ball. Sept. 3.

19,062. W. R. Cornell, Black Bourton, Oxon. Life belt. Sept. 4.

19,091. T. J. Cooper and J. D. Smith, London. Pneumatic tire. Sept. 4.

19,100. I. E. Winslow and W. P. Pearsall, London. Resilient wheel for vehicles. Sept. 4.

19,148. V. Pappenheim, London. Syringe. Sept. 5.

19,149. V. Pappenheim, London. Spraying bottle. Sept. 5.

19,159. G. R. Venner and F. W. Trash, London. Pneumatic tire for cycles and motors. Sept. 5.

19,162. W. F. Williams, London. Elastic tire. Sept. 5.

19,192. Carl Otto Weber, Crumpsall. Improvements in the utilization of low grades of India-rubber and Gutta-percha and their resinous constituents. Sept. 7.

19,230. W. Barber and F. Johnson, London. Revolving heel pad. Sept. 7.

19,295. C. Bissell and W. Bradshaw, Manchester. Pneumatic tire and rim for cycles and motor cars. Sept. 8.

19,299. P. A. Martin and B. A. Martin, Birmingham. Tire for vehicle wheels. Sept. 8.

19,325. H. F. Hills, London. Puncture resisting device for tires. Sept. 8.

19,346. J. Griffiths, London. Adjustable heel pad. Sept. 8.

19,413. H. Metzger, Manchester. Inflatable toy. Sept. 9.

19,429. E. S. Woolf, Liverpool. Antislipping device for pneumatic tires. Sept. 9.

19,450. Anna Wesp, London. Seamless dress shield and method of manufacture. Sept. 9.

19,455. M. McNally, London. Cap for closing severed ends of tire inner tubes. Sept. 9.

19,565. J. Monk, Manchester. Pneumatic tire. Sept. 11.

- 19,569. L. Mistovski, Manchester. Improved seam for waterproof garments. Sept. 11.
 19,570. Isidor Frankenburg, Limited, and W. Hubbard, Manchester. Heel pad. Sept. 11.
 19,608. A. Evans, London. Pneumatic tire. Sept. 11.
 19,635. L. D. Tandy and R. H. Smith, London. Fittings for pneumatic and other elastic tires. Sept. 11.
 19,747. S. Johnson, London. Boot heels and soles and method of attaching same. Sept. 14.
 19,809. T. C. Redfern, Manchester. Detachable heels for boots. Sept. 15.
 19,884. H. Panzetta and H. H. Frost, London. Vulcanizing apparatus. Sept. 15.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, AUGUST 12, 1903.]

- 8,881 (1902). Means of preventing punctures in pneumatic tires. R. M. Howison, London.
 *8,893 (1902). Syringe nozzle. W. L. Wise, London. (W. H. Pumphrey, New York.)
 8,980 (1902). Elastic tire [consisting of a series of springs enclosed in a cover of rubber or other material]. C. A. Brandt and A. Förnelius, Sandviken, Sweden.
 *8,982 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *8,983 (1902). Golf ball. *Same*.
 *8,984 (1902). Golf ball. *Same*.
 *8,985 (1902). Golf ball. *Same*.
 9,133 (1902). Gauntlets [with elastic closely fitting wrist part]. A. Dunhill, London.
 9,137 (1902). Inhaler. S. R. Hatch, Bristol.
 9,171 (1902). Pneumatic tire [with tread compounded of rubber, metal, etc.]. G. G. Smith, Madgeburg, Germany.
 9,202 (1902). Air or water cushion for use in baths. E. Rose, Neu-rode, Germany.
 *9,240 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *9,241 (1902). Golf ball. *Same*.
 *9,242 (1902). Golf ball. *Same*.
 *9,243 (1902). Playing ball. *Same*.

[ABSTRACTED IN THE OFFICIAL JOURNAL, AUGUST 19, 1903.]

- *9,511 (1902). Insulating composition. L. Randolph, Newark, New Jersey.
 9,539 (1902). Elastic tire [composed of a series of springs with intermediate spaces filled with rubber]. F. S. de Mondran and E. B. Gras, Paris, France.
 9,552 (1902). Hernia truss. F. Matuchet, Paris, France.
 9,625 (1902). Vulcanization of India-rubber [the articles being placed in vessels heated by steam pipes and connected with a pump for circulating air or other gas]. W. W. Wittenberg, E. Brock, and E. Koch, Riga, Russia.
 9,650 (1902). Cement for repairing tires [a solution of Gutta-percha in carbon bisulphide with mineral naphtha]. E. Blumdel, Wem, Shropshire.
 9,698 (1902). Valve for foot balls or pneumatic tires. F. W. Ingram (J. G. Ingram & Sons), London.
 9,771 (1902). Ear trumpet. T. W. Messenger. Quorn, South Australia.
 9,804 (1902). Vulcanizing mold for wheel tires and the like. E. Bert, Paris, France.
 9,805 (1902). Method of molding or vulcanizing wheel tires and the like. *Same*.
 *9,859 (1902). Tool for stripping insulation from wire. C. C. Sibley, Perth Amboy, New Jersey.
 9,945 (1902). Elastic tire [of springs enclosed in a rubber cover]. L. Henss, Wiesbaden, Germany.

[ABSTRACTED IN THE OFFICIAL JOURNAL, AUGUST 26, 1903.]

- 10,218 (1902). Plastic composition [for insulation work or as a substitute for celluloid]. A. Luft, Lemberg, Austria.
 10,240 (1902). Collapsible and folding bath. E. W. Lancaster, London.
 10,349 (1902). Toy balloon. A. J. Boulton, London. (S. A. pour le Commerce et l'Industrie du Caoutchouc, Brussels.)
 *10,398 (1902). Elastic tire [with cork core]. H. Barnard, Hamilton, Ontario.
 10,406 (1902). Sole and heel protector for boots. J. S. Howkins, Thornton Heath, and J. Weaver, London.
 10,421 (1902). Nipple for feeding bottles. W. G. Plucknett, Bristol.

- *10,453 (1902). Method of making balls. E. Kempshall, Boston, Massachusetts.

[ABSTRACTED IN THE OFFICIAL JOURNAL, SEPTEMBER 2, 1903.]

- 10,660 (1902). Elastic tire. R. C. Sayer, Bristol.
 *10,704 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *10,707 (1902). Vehicle wheel [having pneumatic tube or rubber section between inner and outer members]. D. H. Hayward, No. 131 West One Hundred and Third street, New York.
 10,921 (1902). Hose pipe [combined suction and pressure]. P. Mac-Lellan, Glasgow, and J. W. O. Walker, Birmingham.

[ABSTRACTED IN THE OFFICIAL JOURNAL, SEPTEMBER 9, 1903.]

- *11,318 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *11,321 (1902). Vehicle tire [solid, wired on, with elastic rubber tread and hard rubber base molded in one helically coiled length]. W. S. Huffman, Brookline, Massachusetts.
 *11,507 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *11,605 (1902). Playing ball. F. H. Richards, Hartford, Connecticut.
 *11,606 (1902). Golf ball. *Same*.
 *11,607 (1902). Golf ball. *Same*.

[ABSTRACTED IN THE OFFICIAL JOURNAL, SEPTEMBER 16, 1903.]

- *11,752 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *11,753 (1902). Golf ball. *Same*.
 *11,754 (1902). Golf ball. *Same*.
 11,801 (1902). Golf ball. R. Hutchison, Prestwick, Ayrshire.
 11,857 (1902). Pneumatic tire. M. Polack, Waltershausen, Germany.
 11,895 (1902). Flexible tubing [of rubber or other material with internal and external spiral coils]. W. M. Angus and A. Robertson, Newcastle-on-Tyne.
 11,981 (1902). Pneumatic tire [with locking rings for securing the covers]. J. Cottrell, Surrey, and A. M. Smith, London.
 *11,996 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *12,013 (1902). Vaginal syringe. R. H. Eddy, Providence, Rhode Island.
 12,065 (1902). Pneumatic tire [with non-slipping projections]. F. Thorpe, Newmarket Station, Ireland.
 12,143 (1902). Eye cupping and massage apparatus. J. Williams, Birkenhead.

THE GERMAN PATENT RECORD.

PATENTS GRANTED.

- 145,248 (Class 39a). Process and appliance for vulcanizing rubber goods. B. W. Wittenberg, E. Brock, and E. Koch, Riga, Russia. Sept. 2.
 144,153 (Cl. 71a). Rubber shoe. C. P. Böhnke, Riga, Russia. Sept. 2.
 145,524 (Cl. 63e). Air tire with tread fortified by ribs. J. F. Lober, Pittsburgh, Pennsylvania, United States. Sept. 9.
 145,525 (Cl. 63e). Pneumatic rubber tire having hollow side spaces provided with solid cores. W. F. Williams, London, England. Sept. 9.
 145,527 (Cl. 63e). Tire with depressions in the sides, adapted to heavy vehicles. W. O. Worth, Chicago, Illinois, United States. Sept. 9.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 205,997 (Class 4a). Gas bag for acetylene lanterns, attached to the pipe system by rubber tube. Oberrheimsche Metallwerke, G. m. b. H. Sept. 2.
 206,004 (Cl. 4a). Rubber insert for wagon lamp holders. U. Stransky, Prague, Austria. Sept. 2.
 206,490 (Cl. 8 d). Wringer rollers, consisting of rubber rings which may be changed when worn. M. Schreiber, Krefeld. Sept. 9.
 206,773 (Cl. 63e). Rubber rims for wagon wheels. B. Panzer, Berlin. Sept. 9.
 206,675 (Cl. 71a). Mode of fastening rubber heels. M. Gühne, Strassburg. Sept. 9.
 207,398 (Cl. 64c). Rubber emptying plug, for drawing off tubes, with side valve to admit the air, adapted to casks with iron bungholes. M. Lind, Mannheim-Neckerau. Sept. 16.
 206,373 (Cl. 71a). Elastic insoles, having rubber tubing on the underside. O. Dietrich, Halle a/d Saale. Sept. 16.
 207,657 (Cl. 12d). Centrifugal drum covered first with hard rubber and then outside with soft rubber. Vereinigte Berlin-Frankfurter Gummiwaaren-Fabriken, Gelnhausen. Sept. 23.
 217,828 (Cl. 63e). Tires with air tube spirally wound and ends fastened with cement. Aug. C. Könecker, Hamburg. Sept. 23.
 217,721 (Cl. 70e). Eraser having different colored squares, giving the appearance of a checkerboard. F. Marx & Co., Hannover. Sept. 23.

NEWS OF THE AMERICAN RUBBER TRADE.

THE FISK RUBBER CO. ASSIGN.

THE following statement was issued on October 15:

The Fisk Rubber Co. has made an assignment to A. N. Mayo, of Springfield [Massachusetts], for the purpose of reorganization and increase of capital stock. The business will be continued without interruption. The assets are in excess of the liabilities, and it is expected that all indebtedness will be paid in full.

James B. Carroll, a lawyer of Springfield, has been retained by the creditors, who, at last accounts, were understood to be favorable to some plan of reorganization that would permit of the business to be continued, with a larger capital than hitherto. The Fisk Rubber Co. were incorporated in the latter part of 1898, to acquire the plant of the Spalding & Pepper Manufacturing Co. (Chicopee Falls, Mass.), in liquidation. The company have been engaged in the manufacture of bicycle and vehicle tires, apparently doing a good business, though the capital has never been increased beyond the original figure, \$33,000. THE INDIA RUBBER WORLD was informed recently that an offer had been made for the Fisk factory by Colonel Albert A. Pope, head of the Pope Manufacturing Co. The Springfield *Republican* states: "A rumor was circulated a few days ago that it [the Fisk company] was on the point of selling out to the Pope company of Hartford, and it is a fact that a short time ago the Pope company made an offer, but it was not considered."

SHELTON RUBBER RECLAIMING PLANT CLOSED.

THE U. S. Rubber Reclaiming Works, having erected at Buffalo, New York, the largest rubber reclaiming plant in existence, have closed for an indefinite period their original plant at Shelton, Connecticut, though the latter will not be dismantled, at least for the present. The Shelton plant dates from 1889, in January of which year the Derby Rubber Co. was incorporated, with \$20,000 capital, by V. A. Page, W. F. Askam, and Robert N., Royal M., and Theodore S. Bassett. The Derby Rubber Co. joined with four other concerns, in forming the Rubber Reclaiming Co., which controlled the trade from May 9, 1891, to June 1, 1895. After the dissolution of the combination the Shelton plant was continued by a new company, the U. S. Rubber Reclaiming Works, with which was merged, in 1900, the Loewenthal Rubber Co., of Jersey City, New Jersey. Theodore S. Bassett, named above, has been identified with the business continuously, being now president of the U. S. Rubber Reclaiming Works, while W. F. Askam, whose knowledge of reclaiming processes was the basis of the original Shelton undertaking, is at Buffalo, as general superintendent.

THE POPE MANUFACTURING CO.

THE details of the acquisition of the American Bicycle Co. and its constituent companies by the new corporation headed by Colonel Albert A. Pope have been given from time to time in these columns. On October 14, all the necessary legal preliminaries having been arranged, orders were given that all business would be transacted in future in the name of the Pope Manufacturing Co., the names "American Bicycle Co." and "American Cycle Manufacturing Co." disappearing. There are factories at Hartford, Connecticut; Westfield, Massachusetts; Hagerstown, Maryland; and Chicago, Illinois. Offices and branches are maintained in New York, Boston, Providence, Philadelphia, Washington, and San Francisco. Early in the month Colonel Pope was invited to address the Hartford Workingmen's Club, which he did, recounting the history of the first Pope Manufacturing Co., incorporated in 1877, with

only \$3300 capital. A handsome floral horseshoe was presented to Colonel Pope by the members of the club.

AMERICAN TUBING AND WEBBING CO.

LORIN M. COOK and Willard C. Perkins, receivers for this company (at Providence, Rhode Island) since March 14, 1903, have applied to the Rhode Island supreme court for leave to liquidate the property, and a hearing has been set for the motion on November 2. Mr. Perkins informed THE INDIA RUBBER WORLD correspondent a few days since that there was no doubt that the property would eventually be sold, but that he could tell nothing definite until after the hearing. Meanwhile, the plant was running on full time and will probably continue to do so until some disposition has been made of the property, but ever since the concern went into the hands of receivers the working force has gradually been diminishing. The claims of creditors are understood to amount to about \$300,000. The embarrassment of the company grew out of the failure of Dresser & Co. (New York), details of which were given in THE INDIA RUBBER WORLD April 1, 1903 (page 239) and July 1 (page 354).

WHY THEIR TIRES ARE HIGHER IN PRICE.

THE Consolidated Rubber Tire Co. (New York and Akron, Ohio) have circulated in their trade a chart illustrating the advance in crude rubber prices, with the following explanatory paragraph: "The above chart gives the New York market price per pound of Pará rubber for the past fifteen months as reported by THE INDIA RUBBER WORLD. This advance in price alone is sufficient reason for the advance in price of Kelly-Springfield tires, and further comment is unnecessary."

A NEW LAST COMPANY IN CANADA.

THE Standard Last Co. of Granby, Quebec, has been organized lately, for the purpose of combining two plants already existing. One is that of the old Granby Last Co., which went into liquidation last summer. The other plant acquired comprises the last making machinery and stock of blocks of the Canadian Rubber Co. of Montreal. A fine equipment has thus been secured. The business management of the company will be in the hands of Joseph Thomas Hart, superintendent of the boot and shoe department of the Canadian Rubber Co., while the factory end will be looked after by John Libby, who formerly operated the last department of the Canadian company.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Sept. 26	320	10 $\frac{1}{2}$	10	400	37 $\frac{1}{2}$	35
Week ending Oct. 3	350	10 $\frac{1}{2}$	10	700	38	36
Week ending Oct. 10	200	10	10	500	37	36
Week ending Oct. 17	1,045	10	7 $\frac{3}{4}$	930	36	35
Week ending Oct. 24	100	10 $\frac{1}{4}$	8 $\frac{1}{2}$	110	35 $\frac{1}{2}$	35 $\frac{1}{2}$

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Sept. 26	1,400	16	15	720	70	66 $\frac{1}{2}$
Week ending Oct. 3	4,830	15 $\frac{3}{8}$	14 $\frac{1}{4}$	235	69	66
Week ending Oct. 10	2,025	15 $\frac{1}{2}$	13 $\frac{3}{8}$	100	64 $\frac{1}{2}$	64 $\frac{1}{2}$
Week ending Oct. 17	1,885	14 $\frac{1}{2}$	13 $\frac{3}{4}$	60	62	60
Week ending Oct. 24	1,487	14 $\frac{1}{2}$	14	37	61 $\frac{1}{2}$	61



PLANT OF THE ATLANTIC RUBBER SHOE CO., CRANSTON, RHODE ISLAND.

NEW PLANT OF THE ATLANTIC RUBBER SHOE CO.

JUST at the edge of the town of Cranston, which is really a suburb of Providence, Rhode Island, the fine plant of the Atlantic Rubber Shoe Co. is rapidly approaching completion. The location, from a manufacturing standpoint, is ideal. It is on the main line of the consolidated railroad, with its own siding. It is also close to the Pawtuxet river, assuring plenty of water, and the five cent trolley fares from Providence render it attractive to labor. The illustration on this page shows the present condition of the plant, except the partly finished 100 foot tower at the main entrance. The officers of the company are Frank N. White, president; G. Trowbridge Hollister, (of Vermilye & Co., bankers, New York), vice president; Charles E. Spencer, secretary and treasurer. The directors are the officers named above, together with Latham A. Fish (of Vermilye & Co.), Thomas B. Hidden, J. H. Flagler (of the Standard Oil Co.), Joseph O. Stokes (of the Home, Trenton, and Joseph Stokes rubber companies), and B. H. Hotchkiss. General Manager Henry J. Doughty is at Cranston, busy with superintending the work of construction. Maurice E. Clark, former superintendent of the Joseph Banigan Rubber Co. (Providence, R. I.), has severed his connection with that company and taken the superintendency of the Atlantic Rubber Shoe Co. His late position with the Joseph Banigan Rubber Co. is filled by James Gray.

THE NEW CENTURY RUBBER CO.

NORMAN GREY, of Camden, New Jersey, receiver of this company, on October 9, offered at public sale at East Burlington, New Jersey, the plant, machinery, goods, and chattels of the company, for which was realized \$3475, the purchaser being the attorney for interests not at the time disclosed. The sale was confirmed by the New Jersey court of chancery on October 12. The building, ground, and boiler and engines, being leased, were not offered for sale. A carload of reclaimed rubber (29,855 pounds) belonging to the company will be offered for sale by the receiver at No. 54 Harrison street, New York, on November 5, at 12 M.

THE NEW YORK CREDIT MEN'S ASSOCIATION.

THE annual report, dated October 1, records some good work accomplished during the year in the furtherance of its objects in the protection of its members against imposition and fraud and in bringing about mutual improvements in trade customs and usages. The association carries on its work in connection with a National Association, by means of which, when a fraudulent collection agency was driven out of New York last year,

it was proceeded against later in various cities in other states, and its head finally placed in jail, where he is now awaiting trial. The objects of this association are most commendable and it should have a larger membership.

COLONEL COLT NOMINATED FOR GOVERNOR.

AT the Republican convention held at Providence, Rhode Island, on October 6, to nominate candidates for the state offices to be filled at the next annual election, Colonel Samuel Pomeroy Colt, of Bristol, was the choice for governor. Colonel Colt filled the office of attorney general in that state, by election,



COL. SAMUEL P. COLT.

for three annual terms (1883-1886), after having served previously for three years as assistant attorney general. Colonel Colt since 1901 has been president of the United States Rubber Co., in which he has been a director since its organization. He had previously been president of the National India Rubber Co.—an office which he still holds—and is now president of two of the other constituent concerns, the Woonsocket Rubber Co. and the Goodyear's Metallic Rubber Shoe Co. Colonel

Colt wrote a letter under date of October 9 accepting the nomination.—The Republican convention at the same time nominated, for reelection as state treasurer, Walter A. Read, a director in the Woonsocket Rubber Co.—Colonel Colt, if elected, will be the second prominent member of the rubber trade to fill the office of governor of his state, the first having been the Hon. Augustus O. Bourn, president of the Bourn Rubber Co. (1883-1885).

ATTRACTIVE ADVERTISING FEATURES.

THE Candee Rubber Co. have brought out a series of ten photo-reproductions of "The World's most Famous Paintings" on cards 6×8 inches. On the back of each is a brief story of the picture and of the artist, with just enough reference to the subject of rubber footwear. The cards will be prized by the shoe retailer's customers—and others—fortunate enough to get them.—The Meyer Rubber Co. have been distributing a series of blotters, faced with lithographed copies of other pictures which, if less famous, are spirited and amusing.—A

novelty in advertising banners is one to be stretched across a retailer's window, or along the wall, instead of hanging in a vertical position. Such a banner, 5 feet long and 10 inches wide, silk faced and metal tipped at the ends, carries the words CANDEE RUBBERS printed in bright colors.==The above are specimens of the material recently prepared by the versatile advertising manager of the United States Rubber Co., Mr. John P. Lyons.

COMBINATION RUBBER AND BELTING CO.

In the United States district court at Trenton, New Jersey, on October 28, J. Kearney Rice, as counsel, filed a petition in voluntary bankruptcy for The Combination Rubber and Belting Co., of Bloomfield. Wilfred Clark, of New Brunswick, was appointed receiver and his bond was fixed at \$15,000. The next step will be the choice of a trustee, by the creditors of the company, subject to confirmation by the court, and after such choice has been made it is understood that steps will be taken looking to a reorganization, with increased capital. The Combination Rubber and Belting Co. was incorporated in New Jersey, March 7, 1901, with \$350,000 capital authorized, and acquired the factory of the long established Combination Roll and Rubber Co., at Bloomfield, which has since been operated in making mechanical rubber goods. The officers of the company are: Adolph Kern, president; Joseph B. Bloomingdale, vice president; Henry Kern, secretary and treasurer; Julius Kahn, manager of sales. The Messrs. Kern are engaged largely in the metal refining trade, being officers of the Vulcan Detinning Co., and Mr. Bloomingdale is one of the proprietors of a large department store in New York. M. J. Hirsch, No. 68 William street, New York, counsel for the company, informs THE INDIA RUBBER WORLD that their liabilities, in round numbers, amount to \$165,000, of which \$30,000 is due for merchandise and the remainder for borrowed money and bank accommodations. The nominal assets are about \$270,000, of which the premises and plant figure at something over \$200,000. The purchase price of the factory was \$100,000, since which time as much or more has been invested in a new building and additional machinery. The improvements involved the borrowing of money, which is about to become due, without the company being prepared for payment, on account of the failure of certain plans for placing bonds. It is understood that the officers mentioned above are the principal creditors.

POPE MANUFACTURING CO. BRINGS SUIT.

THE sheriff of New York county on October 14 received a writ of attachment against the Rubber Goods Manufacturing Co., in favor of the Pope Manufacturing Co., on an assigned claim for \$200,000 of the American Bicycle Co., to recover which sum an action has been brought in the New York supreme court. Under date of November 8, 1899, the American Bicycle Co. sold to the Rubber Goods Manufacturing Co. three rubber tire plants—the Hartford, the Indianapolis, and the Peoria—the consideration involving an agreement by the American Bicycle Co. to purchase at least 90 per cent. of its requirements in tires from the Rubber Goods company, for five years, while the latter agreed to pay an annual rebate of \$200,000 on such business for the same period. The basis of the present suit is the \$200,000 rebate alleged to have been due on November 1, 1902, and not paid. President Dale, of the Rubber Goods company, states that the counsel of his company are clearly of the opinion that the contract made by the American Bicycle Co. could not be transferred to the Pope Manufacturing Co., and had advised that the matter be allowed to come before the courts, rather than that any settlement be made

with the Pope company. Bond was given and the attachment was vacated on October 15, but the case has not yet been set for trial. The Pope company's attorneys in the case are Butler, Notman, Joline & Mynderse, of New York.

A RUBBER FLOOR TILING PATENT SUIT.

THE Gutta Percha and Rubber Manufacturing Co. has filed a suit against the Peerless Rubber Manufacturing Co. (both of New York), alleging infringement of a patent on rubber floor tiling [No. 543,583, issued July 30, 1895, to John Murphy]. An injunction and accounting are asked. This patent provides for the joining of partially vulcanized blocks of rubber with rubber cement and the completion of vulcanization after they are in place. The Peerless company maintains that this is simply shop practice and is not a patentable process. It claims that the same methods were in use in rubber factories before the patent referred to was granted. The method of putting together these rubber squares which makes cohesive the entire floor covering had been practiced before, according to the contention of the defendant company, in the lettering of rubber foot mats and in other rubber products. Besides the Peerless company, several other concerns making rubber tiling are using practically the same process. Even if they are not made defendants to similar suits, they will look with great interest upon the outcome of this litigation.

TO INSPECT RUBBER FOR THE GOVERNMENT.

THE United States civil service commission announces that an examination will be held November 11 to secure eligibles from which to make certification to fill a vacancy in the position of inspector of rubber in the quartermaster's department at Schuylkill arsenal, Philadelphia, at a salary of \$1,500 per annum, and other similar vacancies as they may occur. This examination is open to all citizens of the United States who comply with the requirements.

NEW INCORPORATIONS.

ELECTRIC Rubber Manufacturing Co., October 6, 1903, under New Jersey laws, to manufacture rubber goods; capital, \$1,000,000. Incorporators: Charles H. George, Smith L. Muller, and William O. McCarthy, all of Jersey City, New Jersey. The headquarters at present are in the office of the Title Guarantee and Trust Co., in Jersey City, whence THE INDIA RUBBER WORLD is informed: "Nothing has been done since the incorporation except to conduct a few experiments, the nature and details of which we would rather keep quiet at the present time. As soon as the company is financed and ready to do business we should be pleased to give all the information which you may care to have."

=The George W. Knowlton Rubber Co. (Boston), October 19, 1903, under Maine laws; capital, \$10,000. George W. Knowlton is president and treasurer. The other incorporators are Edwin A. and A. G. Knowlton, of Arlington, Massachusetts, and G. M. Watts, Portland, Maine. To succeed copartnership by same name, engaged in the packing trade, at No. 33 Broad street, Boston.

=The Colorado Rubber Co. (Denver), October 12, 1903, under Colorado laws; capital, \$25,000. Object, to wholesale rubber goods exclusively, including "American," "Para," "Woonsocket," and "Rhode Island" brands of rubber footwear, mackintoshes, oiled clothing and druggists' sundries. The officers are Jacob Hammer (formerly secretary and treasurer of the St. Paul Rubber Co.), president; Albert Fischer (president of the St. Paul Rubber Co.), vice president; Frank H. Donahower, secretary and treasurer.

=East Burlington Rubber Co. (East Burlington, New Jersey), October 17, 1903, under New Jersey laws; capital, \$100,000.

Incorporators: E. E. Clift, J. H. Camp, John Dearbone, and Joseph H. Edwards, of Philadelphia, and Lewis Starr, Camden, New Jersey. It is understood that the object is to operate the plant of the New Century Rubber Co., manufacturers of reclaimed rubber, which recently went into liquidation.

=Mercury Rubber Co., October 27, 1903, under New York laws; capital, \$15,000. Directors: I. Markowitz and George Bernard, New York city; Charles F. Hart, Elizabeth, New Jersey.

A STRIKE ENDED AT TORONTO.

AFTER having been on strike for ten weeks, the employes of The Maple Leaf Rubber Co., Limited, at Port Dalhousie (near Toronto), on October 21, at a meeting in their union hall, decided to apply in a body to be taken back in the company's employ. The management of the company decided, however, that each applicant for work must be considered individually, and each was required to sign new factory regulations. The company does not recognize the Union, but Superintendent R. F. Foote assured the employes that they should receive hereafter as high wages as were paid in any other Canadian factory for the same work, and in some cases this will result in an increase of wages.

RUBBER WORKERS' UNIONS.

THE officers of Akron Local, No. 5, are: Charles Fornaker, president; John Callahan, vice president; E. M. Goodenberger, corresponding secretary; W. A. Labbe, secretary and treasurer.

TRADE NEWS NOTES.

BUSINESS in the mackintosh department of the Apsley Rubber Co. (Hudson, Massachusetts) is reported very good. This department will now be enlarged, owing to room being gained by transferring to the new building mentioned in our last issue some of the boot and shoe work formerly carried on in the same building with the mackintosh work. Already about 100 new sewing machines have been installed in the stitching rooms.

=Letters patent of incorporation have been granted to A. V. Roy, John J. McGill, Edward Gauthier, Gustave Gravel, and M. Huberdean, all of Montreal, Canada, as the Corona Rubber Co., with capital of \$100,000, and headquarters in that city.

=Mr. Albert T. Bell, for some time manager of the New York store of The B. F. Goodrich Co. (Akron, Ohio) has resigned his position, and will take charge of a large hotel, to be known as "The Chalfonte," soon to be erected at Atlantic City, New Jersey. Mr. F. P. Stewart takes his place as manager of the New York store.

=Thirty shares of American Chicle Co., preferred, were sold at auction in New York on October 7 at 80½.

=The Sweet Tire and Rubber Co. (Batavia, New York) were exhibitors at the recent national carriage convention at Boston, where they booked some good orders, and it is stated that they have now business enough in hand to keep the factory busy through the season.

=The fact that the control of the Glenark Knitting Co. (Woonsocket, Rhode Island) is now in the hands of important shareholders of the United States Rubber Co. has given rise to reports that the former company is controlled by the latter. The statement has been authorized, therefore, that the United States Rubber Co. stand on the same basis in relation to the purchase of Glenark goods as any other large customers.

=Selden W. Tyler has retired from J. H. Stedman & Co., Inc. (Boston), dealers in scrap rubber—having sold his interest to the Stedman family—and accepted a position with Carter's ink Co. (Boston), a concern with which he was connected formerly.

=The Rubber Step Manufacturing Co. (Exeter, New Hampshire) lately filled an important order for rubber step pads for a German coachbuilding house.

=The Connecticut Rubber Co., extensive retailers of rubber goods at Hartford, Connecticut, were active supporters of the recent "Merchants' Week" enterprise in that city. During the week ending October 3, visitors from the neighboring towns, who came in under a half-fare arrangement made with the railways, were offered a concession in prices on retail purchases, the idea being to make the people of those towns acquainted with the Hartford stores in a way that would make a good impression.

=The Cambridge Manufacturing Co., organized last spring to make golf balls at Plantsville, Connecticut, have removed their plant to Bridgeport, in the same state. Mr. W. T. Dale is not now connected with the company.

=J. F. Preston, of the Preston Hose and Tire Co., has brought suit against six members of the board of trade of Marlboro, Massachusetts, for a sum claimed to be due and unpaid, on account of a bonus promised to him in consideration of the location of his factory in that town.

=William S. Hunnewell, lately of Exeter, New Hampshire, has sold his residence there and purchased a ranch at New Chicago, Montana, he being now connected with the Goodyear Rubber Co.'s business at Butte, Montana.

=Suit has been brought against the Diamond Rubber Co. (Akron, Ohio) by Mattie D. Vanderhoff, for damages in the sum of \$1995, claimed for injuries alleged to have been sustained by her, while employed by the company, through slipping on a platform outside the factory, on which sleet had fallen.

=William Meagher, who has been appointed chief engineer in the factory of the Joseph Banigan Rubber Co. (Providence) was engineer in the factory of the Marvel Rubber Co. (Woonsocket) when that concern was in business.

=The factory of the Manhattan Rubber Manufacturing Co. (New York), at Passaic, New Jersey, though located in the district so disastrously flooded early in the past month, was not obliged to cease operations. Many other mills were closed, however, and the damage to Passaic has been estimated at \$2,000,000.

=The new four story brick building of the New York Insulated Wire Co., at Wallingford, Connecticut, mentioned in this journal in August as being under way, is reported completed.

= "There is a Place in Every Mill for the 'Original Rubber Man'" is the title of an attractive advertising folder issued by the Boston Belting Co., who manufacture so many rubber requisites for mill and factory use.

=The new rubber shoe factory of Terrence McCarty, at Bristol, Rhode Island, began operation on October 23.

=The Whitehead Brothers Rubber Co. (Trenton, New Jersey) have been making further improvements in their plant, putting in new shafting and gears, and adding machinery, including a Royle tubing machine. Their hose capacity is now 14,000 feet a day.

=Captain John J. Farley has left the druggists' sundries department in the factory of the National India Rubber Co. (Bristol, Rhode Island) to accept the position of foreman in the same department in the factory of Morgan & Wright (Chicago). Before leaving Bristol, Captain Farley was the recipient of a handsome piece of jewelry from the employes of his department at the National factory, together with an expression of their best wishes for his success in his new field. Captain Farley derives his military title from being commander of a company in the Rhode Island militia.

=The vacancy in the office of president of the Mishawaka Woolen Manufacturing Co. (Mishawaka, Indiana) due to the recent death of Martin V. Beiger probably will not be filled before the regular annual election, in January next.

=Charles W. Barnes, who has been connected for several years with the Boston offices of the United States Rubber Co., has removed to New York, where he will fill the position of assistant to Edward R. Rice, manager of the branch stores of the company since June, 1902. On the evening of October 9 a complimentary dinner was given to Mr. Barnes, at the Algonquin Club, Boston, by a number of his friends in the rubber business in that city, on which occasion a handsome scarf pin was presented to Mr. Barnes as a testimonial of their regard. The presentation speech was made by George P. Eustis, of the American Rubber Co.

=The firm of Lamkin & Foster (Boston), wholesalers of boots and shoes and rubbers, whose embarrassment was reported in THE INDIA RUBBER WORLD for August, has been succeeded by Lamkin & Foster, Incorporated, with a charter under Massachusetts laws dated October 13, 1903, with an authorized capital of \$200,000, in equal shares of preferred and common stock. Alfred S. Foster is president, Charles A. Mooar vice president, Laurence A. Mooar treasurer, and Guy Lamkin and Clarence T. Mooar additional directors.

=It is stated that the showing made of the business of the United States Rubber Co., at the monthly meeting of directors on October 15, showed that the business of the company for the four months ended August 1 was the largest for the same period in any year of the company's history.

=Frank E. Hall, who for so many years past has been connected with the rubber trade, has designed a new type of gasoline engine for automobiles, and has incorporated the Hall Gasoline Engine Co., with a plant at Wollaston, Mass. It will be remembered that Mr. Hall is the inventor and patentee of the Hall sectional tire. A set of these tires is now running on a large delivery wagon owned by R. H. Macy & Co., of New York. These tires are said to be the largest ever made, each block weighing 10 pounds, the four tires weighing 700 pounds. The load which they carry is about 19 tons and the tires have now been in use about five months.

=The Hood Rubber Co. (Boston) are distributing to the stores handling their boots and shoes some attractive advertising pictures. One, framed under glass, is labeled "Above All Others," and shows a case of "Hood rubbers" carried far above the earth in a balloon.

=E. A. Sprague, formerly with Richard Levick Sons & Co. (Philadelphia), and prior to that a well known salesman of rubber goods to hospitals and the druggists' trade in New England and New York, has accepted a selling position with Mulconroy Co., Inc. (Philadelphia).

=William J. Kelly, who has been connected for several years with George A. Alden & Co. (Boston), as their New England salesman, has accepted a position with Poel & Arnold (New York). Mr. Kelly's many friends in the New England trade, while regretting his removal, wish him the best of success in his new position.

=R. L. Chipman, who for more than two years has been the resident agent at Akron, Ohio, of George A. Alden & Co., and the New York Commercial Co., has returned to Boston to fill the vacancy in the Alden forces made by the resignation of W. J. Kelly. It is understood that Harold W. French will go from the Boston office to Akron to replace Mr. Chipman.

=The place of business of I. Fajan's Electrical Construction Co. (No. 42 East Twenty-third street, New York) has been attached on two executions, one of which, for \$1108, is in favor

of The India Rubber and Gutta Percha Insulating Co. (New York). The company was incorporated in 1901, with \$5000 capital.

=Mr. George A. Lewis, president of the Beacon Falls Rubber Shoe Co. (Beacon Falls, Conn.) and president of the Naugatuck National Bank, has just returned from the annual national Bankers' convention in San Francisco, California.

PERSONAL MENTION.

MR. JOHN C. WILSON, president of The India Rubber Co. of New Brunswick, N. J., and Miss Grace L. Hall, daughter of Mr. John H. Hall, of Hartford, Conn., were married in the latter city on the evening of October 7th, in the church of the Good Shepherd, the rector being assisted by the Rev. Charles E. Woodcock, Mich., an old friend of the bride's family. Mr. Lewis D. Parker, president of the Hartford Rubber Works Co., was best man; Miss Emma Rutherford of New York was the maid of honor, and Miss Margery Parker the flower girl. Among the wedding presents were several from the company of which Mr. Wilson is president.

=The Governor Betts named in a recent despatch from the Philippines, reporting the end of an uprising in the province of Albay, is Mr. Arlington U. Betts, who used to be engaged extensively in the rubber cement trade at Toledo, Ohio. He has now been governor of Albay for more than two years. His territory embraces 15,000 square miles, in the southern part of the island of Luzon, with about 183,000 inhabitants, engaged in hemp growing.

=Mr. Henry H. Holland, who has been formally appointed manager of the European depot of the United States Rubber Co., in London, to succeed the late John W. Knott, whose assistant he was formerly, is making his first visit to the United States, with a view in part to visiting the company's factories.

=The engagement is announced of Mr. Clarence E. Hill, traffic manager of the Boston Rubber Shoe Co., Boston, and Miss Alice H. Robinson, of Providence, Rhode Island.

=Mr. G. Louis Richards, formerly Boston city sales agent for the Boston Rubber Shoe Co., is now president of a New York real estate corporation.

=The will of the late Martin V. Beiger, president of the Mishawaka Woolen Manufacturing Co., who left 12½ per cent. of his estate to De Pauw University and 5 per cent. to the New York Chatauqua, is being contested by his widow, who filed papers to that effect at South Bend, Indiana, on October 7.

=Mr. Herbert F. Moore has resigned as instructor in machine design at Cornell University to accept a position as mechanical engineer at Riehle Bros. Testing Machine Co. (Philadelphia).

BALATA FROM DUTCH GUIANA.

THE Balata industry in Dutch Guiana in 1902, according to a British consular report, was more prosperous than for several years past, the exports being stated as follows:

	1899.	1900.	1901.	1902.
Pounds.....	260,922	459,371	521,400	728,200

The latter figure is only a little smaller than the highest production ever reached (in 1896), and brings up the average for the above four years to the usual average for the colony, thus offsetting the depression in the output a few years ago. A peculiar fact stated in the consul's report is that much Balata is lost in transit between the "bush" and the seaport, which is leading the traders to insure their produce. The report reads: "It is difficult to say how much was lost in this way, but within six months claims were made against a single insurance company for about £7500, the value—insured—of some 90 tons lost in the rivers by the upsetting of the boats."

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The second annual convention of the Amalgamated Rubber Workers' Union of America was held at Akron during the four days October 12-15. Fourteen unions, affiliated with the national organization, were represented by delegates. At the opening session of the convention, on Monday afternoon, Mayor C. W. Kempel, a union man, who was elected by the working men of the city, delivered an address of welcome. J. D. Thomas, president of the Central Labor Union of Akron, delivered a welcoming address in behalf of organized labor in this city, and, together with the mayor, took an active part in the convention. On Monday evening the visitors were the guests of the Central Labor Union. On Tuesday and Wednesday the sessions were of a business nature and were behind closed doors. On Wednesday afternoon the question of child labor was discussed, and the union pledged itself to attempt to secure legislation unfavorable to the employment of children in factories and to the employment of women between the hours of 6 P.M. and 6 A.M. The delegates present were:

Chicago Local, No. 1.—John Dean, W. T. Dunn, Harry Brick.
Concord Junction Local, No. 2.—Clarence E. Akerstrom, Charles H. Stevenson.
Cambridge Local, No. 3.—Thomas J. Edwards.
Trenton Local, No. 4.—James O'Donovan, Harry Archer, E. Thomas Staunton.
Akron Local, No. 5.—William Labbe.
Kokomo Local, No. 6.—Clem Jackson, Fred Cooper.
Port Dalhousie (Ontario) Local, No. 7.—John J. Phillmore, Frank Blaine.
Montreal Local, No. 8.—J. E. Bernard.
* Montreal Local, No. 9.—Maud Jerett.
New York Local, No. 10.—Robert Gorham, Edwin Turnberger.
Toronto Local, No. 11.—George A. Martin, Geale Woodall.
St. Louis Local, No. 12.—Wilbur Walton, J. M. Cannon.
Hamilton Square (New York) Local, No. 13.—William Scudder, John J. Redwood.
* New Haven Local, No. 14.—Maud Heaney, Agnes Donahue.

[* These unions are composed of women.]

Officers for the ensuing year were elected as follows:

President—Thomas J. Edwards, Cambridge, Massachusetts (re-elected).
First Vice President—Harry Archer, Trenton, New Jersey (succeeding C. H. O'Boyle).
Second Vice President—Charles H. O'Boyle, of Chicago (succeeding C. H. Stevenson).
Third Vice President—John J. Phillmore, of Port Dalhousie, Ontario (succeeding M. E. Mahoney).
Secretary and Treasurer—Clarence E. Akerstrom, of Concord, Massachusetts (re-elected).
General Organizer—James O'Donovan, of Trenton (succeeding W. T. Dunn).

The next annual convention will be held in Trenton, in 1904. In discussing the question of differences between workmen and their employes, President Edwards said to your correspondent: "I find that the Eastern manufacturers do not feel the same toward organized labor as does the Western manufacturer. There exists in the East a perfect understanding between organized labor in the rubber trade, and there is little trouble. Here no such feeling exists, or at least only in a limited degree, and to cultivate such a feeling was one of our objects in coming here."

* * *

THE annual meeting of the Diamond Rubber Co. was held in Akron on October 13, and the election resulted in the old officers being chosen for another year, as follows:

President—F. A. HARDY, of Chicago.
Vice President and Superintendent—A. H. MARKS, Akron.
Secretary—W. B. MILLER, Akron.
Treasurer—A. H. NOAH, Akron.

These officers, with O. C. Barber, Akron; J. K. Robinson, New York; and W. B. Hardy, Chicago, constitute the board of directors. The question of the erection of a new building was not taken up. Treasurer A. H. Noah states that the company have no intention of erecting an office building at the present time. "The business of the company during the past year was excellent," said Mr. Noah. "The tire trade was the best in the history of the company, especially in automobile and bicycle tires. Naturally the automobile tire trade was better than ever before owing to the increase in the number of machines on the market, and our company made more bicycle tires than ever before." When asked if there is any reason to expect that the trade in bicycle tires next year will exceed this year's business, Mr. Noah stated that he knew of none. The results achieved in the use of Diamond tires in the automobile endurance contests were a source of great satisfaction to the officers of the company.

* * *

THE Lilly Rubber Manufacturing Co., of Barberton, have increased their capital stock from \$10,000 to \$50,000. The company will place a limited amount of stock on the market, and with the proceeds will increase the capacity of their plant. The officers of the company are: Charles Ammerman, president; E. E. Beam, vice president; H. Benner, secretary and treasurer; W. C. Lilly, general manager. In speaking of the increase of capital stock, President Ammerman said: "The Lilly Rubber Manufacturing Co. have been remarkably successful for a new company—we were organized only a little more than a year ago—and during the past year we have built up a trade which warrants us in increasing our capital stock. We expect to greatly increase the capacity of our plant, and to turn out more goods than ever."

* * *

IN the common pleas court at Akron on October 6, on the application of Ossian G. Lyon, vice president of the Lyon Rubber Co., a receiver was appointed for that concern, the court naming A. E. Kling for that position. With the exception of the People's Hard Rubber Co., this is the first instance of the failure of a rubber company in the history of Akron. The present case is not one of importance, the Lyon Rubber Co. having been capitalized at only \$10,000, and its business never having reached large proportions. The company was incorporated October 1, 1902, by several Akron business men, none of whom had had any experience in the rubber business, to succeed a small partnership business formed a few months previously. Receiver Kling informs your correspondent that he will not continue the operation of the plant, but will apply for an order of sale for the property. If the accounts due can be collected—and he thinks that the greater part will be—the creditors can be paid in full.

* * *

REFERRING to the agreement among the rubber tire makers, mentioned in the last INDIA RUBBER WORLD, an Akron rubber manufacturer said to your correspondent: "It has been proved to the satisfaction of all, that manufacturers of rubber tires are able to meet any demand for tires. If the makers of automobiles desire cheap tires, we can make them, no matter how badly we dislike to do so. Competition in the rubber tire trade is so keen now that the manufacturer must meet the demands of his customers, no matter what they may be. If one company refuses to make a cheap tire others stand ready to do so, and the company which desires to put only the best grade of goods on the market have no choice but to follow. It is an unfortunate thing that the automobile makers have not recognized the fact that cheap tires are a bad thing. Just as a chain

is no stronger than its weakest link, so is an automobile no stronger than its weakest point. This point, owing to the too frequent desire on the part of the maker to economize, is often the tire. By paying an utter disregard to the quality of the tire with which he equips his machine the automobile maker has done not a little to injure his own business. It is a well known fact that the tendency of cheap tires to wear out and puncture frequently has been the cause of many people becoming disgusted with the automobile. It was so with the bicycle, and tire makers have been going through the same experience they had with the cheap bicycle tire. The new agreement seems to me to be the best thing for all parties concerned that could have been devised. Without the maker's guarantee the buyer will not purchase tires, so it is an assured fact that the agreement will accomplish the purpose for which it was made. While automobile makers have been so busy devising new things to increase the speed and efficiency of their machines, the buyer, the man who puts up his hard cash, has been studying some on the question of tires, and I make no wrong assertion when I say that the buyer is perfectly satisfied with the agreement. He realizes that it means better service for him, and he is content. I can see no reason at all why the agreement will not accomplish its purpose to the satisfaction of not only the tire maker but the manufacturer of automobiles and the users of them as well."

* * *

MR. HOWARD HOSKIN, bookkeeper for the Goodyear Tire and Rubber Co., was married to Miss Ella B. Hershey, daughter of Mr. E. A. Hershey, of Columbus, Ohio, on Wednesday evening, September 30. The wedding was solemnized by Dr. Washington Gladden of Columbus. They will make their home in Akron.

THE PARA RUBBER PLANTATION CO.

A MEETING for the reorganization of the Para Rubber Plantation Co. was held in Chicago on October 6, at which it was decided to change the name to the International Rubber and Trading Co., and to increase the capital stock to \$10,000,000, divided equally between preferred and common shares. The capital formerly was \$5,000,000, all common stock. Milton Doud was elected secretary and treasurer, in place of F. M. Crawford, who formerly held these offices. There are now two vacancies in the directory, which President Cudahy says he will try to have filled by well known and substantial business men. The offices of the company will continue at No. 52 Broadway, New York, which was the headquarters of the Para Rubber Plantation Co.

Mr. John Cudahy, president of the company, stated to THE INDIA RUBBER WORLD correspondent that the character of the company's properties was such as to warrant him in claiming that the company would be a financial success. He said that heretofore much advertising matter had been circulated which he did not approve of and which was misleading. He said that this had been stopped, and that it had led to the present reorganization steps. Mr. Cudahy stated that he proposed to take hold of the affairs of the International Rubber and Trading Co. personally and manage them in a way that would develop the properties and be satisfactory to the most exacting shareholder. He said that the man chosen for the post of secretary is a transportation man.

Early in the month parties interested in the rubber industry in New York and its vicinity received letters dated October 7 and signed by Carl A. G. Adae, "investment broker," No. 31 Barclay street, New York, offering 500 shares of the Para Rubber

Plantation Co. at \$7.35, the par value being \$10. Mr. Adae was found to have desk room on an upper floor at the address mentioned, with a firm dealing in florists' supplies. His name did not appear on any sign and he was found only after considerable effort. He stated that the stock he had to offer was held by a young man in the employ of the Para Rubber Plantation Co., and at present on their properties on the river Casiquiare. Mr. Adae stated further that the company had paid two 6 per cent. dividends within a year from the sale of \$300,000 worth of rubber in New York. As for transportation, he stated that at certain seasons the Casiquiare flowed toward the Orinoco, which furnished an outlet to the seaboard, and that at certain other seasons it flowed toward the Negro, when that stream was used for transportation. When Mr. Adae was called upon, however, he said that it had been decided to withdraw all the stocks from sale, pending a reorganization of the company "on a larger scale."

THE OBITUARY RECORD.

HENRY STEERS, of New York, who was accidentally drowned on September 29 while fishing near his summer home in Massachusetts, was a director in the Rubber Goods Manufacturing Co.—which position he had held from the first organization of that company—and in a number of financial institutions. He was born in New York, September 14, 1832, and grew up in the shipbuilding business with his uncle, George Steers (who designed and built the famous schooner yacht *America*), to which business he succeeded and expanded to very large proportions, retiring in 1875. Mr. Steers was the last survivor of the crew which sailed the *America* in English waters in 1851, bringing to the United States the Cup which British yachtsmen ever since have been trying to regain.

JAMES McCORD, one of the best known merchants in the West, and who died at his home in St. Joseph, Missouri, on September 25, was born in Virginia, January 7, 1826. At an early age he removed to Missouri, where he began a business association with the late Abram Nave, which lasted 52 years and proved exceptionally successful. McCord at the time of his death was interested in a number of wholesale houses, including the McCord Rubber Co., incorporated in 1895, to continue the boot and shoe trade of the St. Joseph branch of E. B. Preston & Co. (Chicago), after the death of Mr. Preston in the same year.

CHARLES RUNYAN died at his residence in New York on October 13, in his sixty sixth year. His business career began about forty-five years ago, in the employment of the Union India Rubber Co. (New York,) then one of the most important rubber manufacturing concerns in the country, and later he filled for a while the office of secretary and treasurer of that corporation. He next became interested in the coal business, and was successively secretary and treasurer of the Superior Mountain Coal Co., president of the Hoboken Coal Co., and president of the Communipaw Coal Co. The latter position he held at his death.

MARSHALL FIELD, the Chicago merchant prince, after an exhaustive series of tests, has become a firm believer in the value of the rubber horseshoe. The horses employed in his business, since being shod with rubber, give six years of service, instead of three years as formerly. And that the horses themselves approve is evidenced by the fact that they refuse a hard pavement every time unless they have on rubber shoes—that is, of course, once they have acquired the "pad habit." The city of Chicago, by the way, with its enormous use of horses, has become one of the best markets in the world for rubber horseshoe pads.

THE TEXTILE GOODS MARKET.

IT is not often that the rubber trade is called upon to face such conditions as exist at the present time. In years past, the first of October saw the greater part of the textile requirements of the rubber mills covered for the entire year, but November has come and probably not 2 per cent. of the mills have closed contracts for their cotton fabrics. The reason is clear to those who have watched the fluctuations of the raw cotton market. Last month the manufacturers of duck and sheeting looked forward to the middle of October when they would have closed up all the business their mills could take care of for the season, but when that time came both the seller and the consumer were as much at sea as ever, and a fortnight later they were no better off.

A week ago some thought that the market had settled down to a substantial and steady basis, for a time at least. A few rubber concerns made contracts, and a number of the stitched belting factories also placed their contracts for the year. These arrangements are said to have been made on the basis of 10 cent cotton, and the duck contracts were made at about 20 cents a pound. Some have paid more and others less, but it is understood that 20 cents is about the average. The past week saw a number of rubber manufacturers in the market looking over the field, and it is understood that some of them were about to close contracts for the year, but in the meantime the cotton market took a sudden jump and the textile manufacturers shrunk from proceeding farther until conditions became more settled. Here the matter stands.

The developments during the past day or two in the cotton market have caused those who have made contracts to congratulate themselves, as good authorities are now figuring on a 10,000,000 bale crop, but this is a "bullish" estimate, and must be accepted for what it is worth. The price of raw cotton has, however, advanced during the past week $\frac{1}{2}$ cent a pound and the market is in the complete control of the "bull" element. But meanwhile the rubber trade and the stitched belting people are not suffering for textiles. The latter having placed such heavy orders last year for their season's supply they are now in possession of sufficient quantities of duck to keep their mills running until such time as new contracts can be made.

The past week has seen considerable quantities of sheeting change hands, the rubber footwear concerns having bought quite freely at full prices, and the mills producing special grades are well employed at present. The duck mills have been buying cotton as fast as the right grade came into sight, and the most of them have enough to carry them well along into next year. These mills have been running full for several weeks, and the past week marked the departure of commission house representatives out into the rubber field with a view to talking up new business. It is very doubtful if sellers will make contracts on anything less than 10 cent cotton, and perhaps they will ask an even higher price. Many of the spinners have been delaying their purchase of cotton in hope to see a decline, while the British consumers have bought all the cotton they could obtain. This has placed the American spinners in the position of hunters after desirable grades, with poor success in covering their requirements.

The following are the prices of cotton middling upland spots at the ports of New York, New Orleans, and Liverpool:

	New York.	New Orleans.	Liverpool.
October 6.....	9.50 cents	9 $\frac{3}{4}$ cents	5 78d.
October 13.....	9 60 cents	9 $\frac{3}{8}$ cents	5.64d.
October 20.....	9 80 cents	9 $\frac{1}{2}$ cents	5 68d.
October 27.....	10.45 cents	10 $\frac{1}{2}$ cents	5.82d.

The stitched belting people held a meeting in New York a

fortnight ago for the purpose of revising prices and adjusting a number of minor matters of interest to the manufacturers. Representatives were present from all the concerns in the country except the Gandy company, of Baltimore, and as this concern produces about one-third of all the stitched belting used in the United States, its competitors thought it would be a case of playing "Hamlet" with *Hamlet* omitted, and so they sent a delegation to see the Baltimore manufacturer. The conference resulted in settling the question of coöperation in the matter of a readjustment of prices, but the Gandy company refused to enter into any agreement that would restrict its independence in any respect. It is said that there will not be any advance in the price of belting, but the prices on the various kinds will be changed somewhat and made more uniform.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

	Pick.	Yds. to Lb.	
36" Household Favorite,	56x60,	4.00	5 $\frac{1}{4}$ cents.
41" Household Favorite,	56x60,	3 60.	5 $\frac{3}{4}$ cents.
36" Henrietta, L. L.,	48x52,	4 00.	5 cents.
39" Henrietta,	68x72,	4.75	(net) 5 cents.
38 $\frac{1}{2}$ " Henrietta,	61x64,	5 15.	4 $\frac{1}{2}$ cents.
40" Henrietta,	48x40,	2.85	(part waste) 6 $\frac{1}{4}$ cents.
36" Florence C.,	44x44,	6.15	4 cents.
36" American L.,	64x64,	5.00	(net) 4 $\frac{3}{4}$ cents.
40" Majestic C. C.,	48x48,	2.50	7 $\frac{3}{8}$ cents.
40" Majestic B. B.,	do	2.70	6 $\frac{3}{8}$ cents.
40" Majestic B. B.,	do	2 85.	6 $\frac{1}{2}$ cents.
40" Elcaney,	do	3.60	5 $\frac{3}{4}$ cents.
36" India,	do	3.00	5 $\frac{3}{4}$ cents.
<i>Sheetings.</i>			
40" Highgate... 5 $\frac{3}{4}$ c.	40" Selkirk... 7 $\frac{1}{2}$ c.	40" Shamrock... 9 c.	
40" Hightown... 6 c.	40" Sellow... 7 $\frac{1}{4}$ c.	<i>Ducks.</i>	
40" Hobart... 6 $\frac{1}{2}$ c.	48" Mohawk... 10 c.	40" 7 oz. Cran-	
40" Kingstons... 7 $\frac{1}{2}$ c.	40" Marcus... 5 $\frac{1}{2}$ c.	ford... 8 $\frac{1}{4}$ c.	
39" Stonyhurst... 5 $\frac{1}{4}$ c.	40" Mallory... 5 c.	40" 8 oz. Chart-	
39" Sorosis... 5 c.	36" Capstans... 4 c.	res... 8 $\frac{3}{4}$ c.	
40" Seefeld... 8 c.	<i>Osnaburgs.</i>	40" 10 oz. Carew... 11 c.	
	40" Iroquois... 9 c.	40" 11 oz. Carita... 12 c.	

GERMANY AND THE DUTY ON ASBESTOS.

FROM "THE MONTREAL HERALD."

OF one thing Canadians may be certain and it is that Germany will not place any duty on raw materials which may be sent from Canada into that country. My reason for saying so is that the Government itself is a large user of the raw materials sent from Canada and would not be willing to add to its cost."

This statement was made to a *Herald* representative at the Place Viger, by Mr. J. Krug, of Hamburg, the only agent for Canadian asbestos in Germany.

"The demand for Canadian asbestos," he added, "has increased rapidly, as its quality is much superior to that obtained from either Georgia or the United States and certain parts of Russia. The output of asbestos in the Province of Quebec, will this year total over 26,000 tons and this will be quite sufficient to supply the markets of the United States, England and Germany.

"Prices are somewhat lower than last year, and owing to the new purposes that are being found to which it can be put we expect that the demand as far as Germany, at least, is concerned, will be much greater, as far as quality is concerned there is not any other country that can compete with Canada for asbestos."

ONE of our readers in London writes to ask for information concerning a device or process for extracting the *latex* from rubber trees by means of suction, which was referred to some time ago in THE INDIA RUBBER WORLD. We are not aware that this method has been practically developed as yet.

NEW TAX ON RUBBER AT MANAOS.

THE state of Amazonas (Brazil), by a law enacted September 9, 1903, grants to the Banco Amazonas, a credit institution to be established at Manáos by Charles Figueiredo, the right to levy a tax of 100 reis per kilogram on all Rubber, and 80 reis per kilogram on all Caucho produced in that state at the time the same is placed upon the market. This is in addition to all other taxes now levied upon rubber at Manáos. The new tax is to be levied by the state authorities and delivered monthly to the proposed new bank, the capital of which is required to be 2,000,000 milreis [= \$500,000], with the privilege of increase. The concession is to exist for ten years. The bank shall have a department for mortgages and commercial transactions, and may engage in all branches of the banking business. One provision is that after the profits of the new bank shall exceed a certain percentage, new shares equal to the gain shall be created and distributed gratis to the producers of rubber in proportion to the amounts they may have paid under the levy, said shares to be entitled to dividends from future gains of the bank, but not from the proceeds of the tax.

The United States consular agent at Manáos (Mr. George E. Pell) estimates that with an annual production of rubber in Amazonas of 16,000 tons, the new tax—equal to 1,600,000 milreis—will, at the present rate of exchange, amount to \$400,000. He adds:

At certain times in the year many native houses require money to tide them over until they receive rubber from upriver. At such times in the past it has been customary to borrow money from the foreign houses here. Casually looking at the law, it appears that this bank is to be organized and run as an accommodation to the native business houses, thus taking these loans from the hands of the foreigners, but many think that a "corner" in rubber is to be attempted with the aid of this tax. It would result seriously to our very large American rubber trade if a corner could be managed controlling the rubber produced in this state. The rubber manufacturing trades of England and the continental manufacturers would also suffer.

According to United States Consul Kenneday, at Pará, "the new law has created consternation among the rubber buyers throughout the Amazon valley," and "exporters here are already indulging in gloomy forebodings." He quotes a Pará merchant, favorable to the plan, as saying that the intention of the law is to facilitate commerce, and especially the rubber trade, "by the establishment of a bank which shall be able to advance necessary funds to the *aviadores* and commerce in general in a place where ready money is very scarce and expensive, and business is handicapped accordingly."

But the sentiment of all the Pará merchants is not so favorable to the law. Frank da Costa, a very large exporter of rubber from Pará is thus quoted by Consul Kenneday:

This law is sure to work harm to the general rubber trade, but it is yet too soon to say how serious its effect may be. This bank will have 100 reis (2.5 cents) per kilogram advantage over every other buyer in Manáos, and this means practically a corner on the rubber market at that point and an extra annual cost of at least \$400,000, provided the enterprise is well managed. This law is certainly a menace to the whole trade in northern Brazil. However, we can only wait and let matters develop themselves. I have seen other obnoxious and dangerous laws repealed. It may happen again.

With 12 pence as the price of the milreis, the new tax will equal £5, or \$24.33 per metric ton, which is a trifle over 1.1 cent per pound avoirdupois.

CONSIDERABLE deposits of asbestos are reported to exist near the Ropes gold mine at Ishpeming, Michigan, worth from \$50 to \$200 per ton, and mining machinery has been ordered.

NEW TRADE PUBLICATIONS.

THE PEERLESS RUBBER MANUFACTURING CO. (New York) manufacturers of Mechanical Rubber Goods, issue under date of October, 1903, their Catalogue No. 60, which embraces not a little new material in relation to their standard products of Packing, Belting, and Hose, together with numerous specialties in allied lines. Particular mention must be made of the section devoted to Mats, which is attractively illustrated, with mat designs in colors and *fac simile*. This is one of the most attractive looking of the many attractive catalogues of the Peerless company, and a copy will be appreciated by every dealer in rubber goods who secures it. [5½" × 8¼". 150 pages.]

TYPKE & KING (16, Mincing lane, London) have issued a pamphlet of instructions for using the specialties for India-rubber of which they are manufacturers, including golden and crimson sulphurets, various pigments, lead, magnesia, and the like, and also their line of India-rubber Substitutes. The trade in America may obtain this useful little book from the firm's representative, Joseph Cantor, No. 56 Pine street, New York. [3¼" × 5½". 16 pages.]

THE M. LINDSAY RUBBER CO. (New York and Washington) are sending out a handsome illustrated catalogue of their "Agnota" Process Rubber Specialties, several of which have been described in THE INDIA RUBBER WORLD. The list includes gloves, nipples, ice caps, ice bags, finger cots, and so on. In fact, the process may be applied to any seamless specialties. [4¼" × 6¾". 22 pages.]

MULCONROY CO. INC. (Nos. 1213-1215 Market street, Philadelphia) issue a neat illustrated descriptive catalogue of Piston and Sheet Packings, for steam, hydraulic locomotive, and ammonia requirements. A wide variety is listed. [3½" × 6". 24 pages.]

THE DIAMOND RUBBER CO. (Akron, Ohio) have issued a neat catalogue of Rubber Garden Hose, listing their numerous brands, for a variety of purposes, and illustrating their markings in *fac simile*. A few lines of helpful descriptive matter appears in each case. [5½" × 3¼". 36 pages.]

ALSO RECEIVED.

THE Foster Rubber Co., No. 370 Atlantic avenue, Boston.=Friction Plug Specialties. 19 pages.

[Perfection Rubber Co.] John J. Cook, Trenton, New Jersey=Perforated Mats. 8 pages.

Tennant Auto-Tire Co., Springfield, Ohio=Automobile Tire Talk. [Tennant's puncture proof pneumatic tires.] 8 pages.

Knickerbocker Manufacturing Co., Chicago, Illinois.=Knickerbocker India-Rubber Fountain Brush. 12 pages.

The Nippon Rubber Co., Tokio, Japan.=Catalogue and Price List [of rubber belting and hose]. 4 pages.

Bauer & Black, Chicago, Illinois.=The Struggle for Supremacy. [Descriptive of the "O-P-C" suspensories.] 16 pages.

Goodyear Tire and Rubber Co., Akron, Ohio.=The Pneumatic Golf Ball. 12 pages.

Continental Caoutchouc Co., No. 298 Broadway, New York.=Price List [of "Continental" automobile tires, from the company's factory (Hanover, Germany) for the American trade.]

COLONEL WILLIAM JENNINGS BRYAN, of Nebraska, while visiting Mexico recently, with his family, was entertained at the "Hacienda Yale," an extensive private plantation, including rubber on a large scale, the property of Alfred Bishop Mason, the railroad man, and managed by his nephews, J. R. Trowbridge and R. S. Willis, near Tierra Blanca, in Vera Cruz. The hacienda was named for Yale University, where the two young men were educated.

THE LAW ON RESTRAINT OF TRADE.

A DECISION dealing with combinations in restraint of trade, rendered lately by the appellate division of the New York supreme court, while it related to the sale of books, would be equally applicable to such sales contracts as were in force a few years ago in the rubber shoe trade. R. H. Macy & Co., of New York, brought suit to restrain the American Publishers' Association from carrying out an agreement among its members not to sell their publications to any dealer who did not bind himself to retail the books at a fixed net price. The action was brought under the statute (Laws of New York, 1899, chapter 690) declaring to be illegal any contract, agreement, arrangement, or combination, whereby competition in the supply or price of any commodity of common use may be restrained or prevented. On trial the case was won by the defendants, followed by an appeal and a reversal by the higher court.

Justice Ingraham, in the prevailing decision, says that the statute does not attempt to prevent a manufacturer from fixing the price at which he will sell his product. But when the article has passed out of his hands, into the ownership of dealers engaged in general business, its free sale would be restrained, and competition in price would be prevented, by any combination of manufacturers of similar articles to refuse to sell to a dealer who presumed to offer such article at less than the retail price fixed by the manufacturers. The object of the Publishers' Association clearly was to compel every dealer in their books to fix the selling price of each book owned by him at the price designated by the publishers. Hence competition in the price of the books would be restrained or prevented, within the meaning of the statute. It was claimed, for the publishers, that

their agreement related only to copyrighted books, which each publisher has a sole right to publish and sell, and that the agreement was merely carrying out their monopoly under the copyright law. But the court held that when the publisher of a copyrighted book once sells the book, the copyright law gives him no power to interfere with the property right of the purchaser in the book, by regulating the price or otherwise.

Justice McLaughlin, in a dissenting opinion, cited the case of *Park v. National Druggists' Association*, in which the court refused an injunction to restrain the defendant association from granting a rebate only when the jobbers agreed to maintain a fixed rate of prices. He thought that that decision governed the present case. Justice Van Brunt was of the same mind, and said: "I do not see why a seller of property in respect to which he has a monopoly cannot impose any conditions as to its resale that he sees fit."

AFRICAN RUBBER IN TRINIDAD.

IN regard to the rubber species *Funtumia elastica*, formerly known as the *Kickxia Africana*, and producing the so-called "silk rubber" of Lagos, No. 33 of the *Bulletin of the Trinidad botanic garden* says:

"Our trees of this plant have made excellent progress during the past season, and some of them are now 18 feet in height. Several of them have produced seeds and large numbers of seedlings have been raised. Among the trees it is noted (as is general with seedlings), a large amount of variation appears especially in the form and size of the seed pods or follicles. Seed will be ripe about June, 1902."

The *Funtumia* is an important rubber tree.

REVIEW OF THE CRUDE RUBBER MARKET.

AS was to be expected, the sudden and very considerable rise in Pará grades, which reached its limit as the last issue of this Journal was being printed, was followed by an early reaction, but prices are still far above any recent former level. A downward tendency was checked by the results of the Antwerp sale of Congo sorts on October 23, when higher prices were obtained than even at the September sale. Besides, the movement of rubber down the Amazon has been slower than was anticipated at the beginning of the season. In spite of prices being higher than for three years past, and the reported activity of traders in preparing for a large crop, the total receipts at Pará so far have been only slightly larger than at the same period of last season, and decidedly less than in 1901, as these figures show:

	1900.	1901.	1902.	1903.
July.....	860	1260	1290	1280
August.....	1290	1290	1370	1230
September.....	1280	1940	1670	2010
October.....	2350	2640	2280	2280
Total, Four months.....	5780	7130	6610	6780

[a To October 28, 1903.]

At the same time, consumption has been on a large scale. The official returns of imports of crude India-rubber of all sorts into the United States during the first nine months of 1903 show an increase of 5,287,729 pounds over the same period of 1902, or a gain of 14 per cent. The official statement of import values of rubber for the same nine months of 1903 shows an increase of \$8,270,940 over the first three quarters of 1902, or in other words, 45½ per cent. As the amount exported was almost precisely the same in both periods, it is evident that the consumption this year has been decidedly larger than last year,

in spite of the fact that the average import value of all kinds of rubber this year was 61½ cents per pound, against only 48.2 cents during January to September in 1902.

Current prices for Pará sorts are 30 per cent. higher on an average than one year ago.

Prices of Africans and Centrals have declined during the month only about 2 cents a pound on an average. Supplies of many grades of these classes are either very low or exhausted.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on October 30—the current date:

PARA.	Nov. 1, '02.	Oct. 1, '03.	Oct. 30.
Islands, fine, new.....	72@73	107@108	97@ 98
Islands, fine, old.....	@	112@113	@
Upriver, fine, new.....	78@79	110@111	102@103
Upriver, fine, old.....	81@82	112@113	104@105
Islands, coarse, new.....	47@48	68@ 69	57@ 58
Islands, coarse, old.....	@	@	@
Upriver, coarse, new.....	62@63	88@ 89	82@ 83
Upriver, coarse, old.....	@	@	@
Caucho (Peruvian) sheet.....	52@53	60@ 70	63@ 64
Caucho (Peruvian) ball.....	56@57	78@ 79	72@ 73

The market for other sorts in New York on which prices have been better maintained, as a rule is as follows:

AFRICAN.		CENTRALS.	
Sierra Leone, 1st quality	89 @90	Ikelemba.....	92 @93
Massai, red.....	89 @90	Madagascar, pinky.....	81 @82
Benguella.....	72 @73	Esmeralda, sausage.....	72 @73
Cameroon ball.....	64 @65	Guayaquil, strip.....	60 @61
Gaboon flake.....	@	Nicaragua, scrap....	71 @72
Gaboon lump.....	48 @49	Panama, slab.....	54 @55
Niger paste.....	@	Mexican, scrap.....	71 @72
Accra flake.....	20 @30	Mexican, slab.....	53 @54
Accra buttons.....	None here	Mangabeira, sheet.....	55 @56
Accra strips.....	None here	EAST INDIAN.	
Lopori ball, prime.....	91 @92	Assam.....	80 @81
Lopori strip, do.....	84 @85	Borneo.....	@

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.	5\$800	Upriver, fine.	7\$050
Islands, coarse	2\$800	Upriver, coarse.	5\$150

Exchange, 12 $\frac{3}{4}$ d.

Last Manáos advices (October 2):

Upriver, fine.	5\$650/4\$550	Upriver, coarse.	4\$550
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Exchange, 12 $\frac{1}{2}$ d.

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.					
	Fine and Medium.	Coarse.	Total 1903.	Total 1902.	Total 1901.
Stocks, August 31. tons	140	28	168	221	523
Arrivals, September	589	365	954	897	500
Aggregating	729	393	1122	1118	1023
Deliveries, September	641	384	1025	920	537
Stocks, September 30.	88	9	97	198	486

PARÁ.					
	1903.	1902.	1901.	1903.	1902.
Stocks, August 31. tons	120	97	190	650	1525
Arrivals, September ...	1980	1640	1850	590	719
Aggregating	2100	1737	2040	1240	2244
Deliveries, September 1860	1651	1790	1000	969	600
Stocks, Sept. 30.	240	86	250	240	1275

ENGLAND.					
	1903.	1902.	1901.	1903.	1902.
Stocks, August 31. tons	120	97	190	650	1525
Arrivals, September ...	1980	1640	1850	590	719
Aggregating	2100	1737	2040	1240	2244
Deliveries, September 1860	1651	1790	1000	969	600
Stocks, Sept. 30.	240	86	250	240	1275

	1903.	1902.	1901.
World's visible supply, September 30. tons	1719	2595	2797
Pará receipts, July 1 to September 30.	4500	3962	4112
Pará receipts of Caucho, same dates.	415	368	283
Afloat from Pará to United States, Sept. 30.	492	420	408
Afloat from Pará to Europe, September 30.	650	616	628

NEW YORK RUBBER PRICES FOR SEPTEMBER (NEW RUBBER).

	1903.	1902.	1901.
Upriver, fine.	1.00@1.10	74@78	87@91
Upriver, coarse.	79@ 91	59@62	65@66
Islands, fine.	97@1.08	71@75	84@88
Islands, coarse.	66@ 70	46@48	48@50
Cametá, coarse.	61@ 68	47@50	50@51

United States Crude Rubber Imports—Official.

[NINE MONTHS ENDING SEPTEMBER 30.]

	1901.	1902.	1903.
United Kingdom. pounds	4,863,693	5,070,006	7,282,365
Germany.	1,340,184	1,437,160	1,706,430
Other Europe.	6,781,870	5,270,264	6,870,843
Central America.	976,207	806,435	836,904
Mexico.	222,028	224,353	216,692
West Indies and Bermuda.	31,434	47,155	9,054
Brazil.	24,927,390	23,526,180	24,433,802
Other South America.	1,000,183	806,246	1,166,057
East Indies.	315,273	402,927	369,516
Other countries.	22,778	19,843	6,735
Total. pounds	40,481,040	37,610,569	42,898,398
Exports.	2,921,765	2,537,333	2,583,197
Net imports.	37,559,275	35,073,236	40,315,201
Value of imports. \$	20,860,070	\$18,118,144	\$26,389,084
Av. Value per pound.	51.6 cents.	48.2 cents.	61.5 cents.

In regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 58 William street, New York), advises us:

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots—in cents per pound; no change of importance is to be noted this month:

Old Rubber Boots and Shoes—Domestic.	6 $\frac{3}{8}$ @ 7
Do —Foreign.	6 $\frac{1}{4}$ @ 6 $\frac{3}{8}$
Pneumatic Bicycle Tires.	4 @ 4 $\frac{1}{8}$
Solid Rubber Wagon and Carriage Tires.	7
White Trimmed Rubber.	8 $\frac{3}{4}$ @ 9
Heavy Black Rubber.	4 $\frac{1}{2}$
Air Brake Hose.	2 $\frac{1}{2}$ @ 2 $\frac{3}{4}$
Fire and Large Hose.	2
Garden Hose.	1 $\frac{1}{2}$
Matting.	1

"During the first half of October the demand for paper continued very light, and rates ran from 6 $\frac{1}{2}$ @ 7 $\frac{1}{2}$ per cent., but the latter part of the month has shown a slight improvement in demand, and rates eased a little to about 6 @ 7 per cent. for the usual average of rubber paper."

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Since the sale of September 17 the only offering of rubber in this market has been on October 2, when 7 $\frac{1}{2}$ tons of varied sorts brought good prices. The next large sale by inscription will be on October 23, when about 414 tons of Congo sorts will be offered. Among the lots to be disposed of are the following, with the broker's estimations:

43 tons Uelé.	francs 9.55
22 " Aruwimi.	9.70
54 " Upper Congo balls.	10.12 $\frac{1}{2}$
24 " Upper Congo red—Yakoma.	10.12 $\frac{1}{2}$

Receipts since January 1 show a decline of about 300 tons. Sales during the same period show an increase, with the result that stocks here have been reduced. C. SCHMID & CO.

Antwerp, October 12, 1903.

ANTWERP RUBBER STATISTICS FOR SEPTEMBER.

DETAILS.	1903.	1902.	1901.	1900.	1899.
Stocks, Aug. 31. kilos	319,986	756,401	684,355	1,056,124	400,432
Arrivals, September.	455,762	470,084	887,256	417,050	232,517
Congo sorts.	442,435	429,855	571,500	386,202	230,123
Other sorts.	13,327	40,229	115,756	57,848	2,394
Aggregating.	775,748	1,226,485	1,571,611	1,473,174	632,949
Sales, September.	353,890	769,774	675,468	468,412	325,467
Stocks, Sept. 30.	421,858	456,711	896,143	1,004,762	307,482
Arrivals since Jan. 1.	3,762,156	4,028,920	4,726,126	4,584,468	2,628,387
Congo sorts.	3,413,763	3,725,404	4,322,856	3,866,145	2,324,769
Other sorts.	368,393	303,516	403,270	718,323	303,618
Sales since Jan. 1.	4,018,403	3,986,918	4,443,932	3,871,697	2,584,245

RUBBER ARRIVALS AT ANTWERP.

OCTOBER 12.—By the *Philippville*, from the Congo:

Bunge & Co. (Société Générale Africaine) kilos	304,000
Do (Chemins de fer des Grand Lacs)	15,700
Do (Société Isangi)	6,300
Do (Société Anversoise)	48,000
Do (Société "La Kotto")	3,000
Société A B I R.	122,000
Comptoir Commercial Congolais.	800
Société Coloniale Anversoise. (Cie. de Lomami)	12,000
Do (Cie. du Kasai)	63,500
Do.	800
Do.	9,000
Do.	8,600
M. S. Cols.	3,800
W. Mallinckrodt & Co. (Alimaienne)	12,000
Do.	
Caoutchoucs & Produits de La Lobay.	2,600
Comptoir des Produits Coloniaux.	
Do. (Cie. de Ekela & Kadei Sangha)	5,800
Charles Dethier. (La Haut Sangha)	3,300
Do. (La M'Poko)	7,800
Divers.	2,500
	631,500

London.

EDWARD TILL & Co. [October 1] report stocks:

	1903.	1902.	1901.
LONDON { Pará sorts. tons	—	—	—
Borneo.	14	128	134
Assam and Rangoon.	5	12	87
Other sorts.	178	361	481
Total.	197	501	702
LIVERPOOL { Pará.	243	1273	1024
Other sorts.	426	600	1076
Total, United Kingdom.	866	2404	2802
Total, September 1.	1304	2731	2730

Total, August 1.....	1781	3053	2944
Total, July 1.....	2285	3595	3128
Total, June 1.....	2248	3687	3502
Total, May 1.....	2539	3788	3597

PRICES PAID IN AUGUST.

	1903.	1902.	1901.
Pará fine, hard.....	4/1 @ 4/3	3/0 1/4 @ 3/3	3/7 1/4 @ 3/10 1/2
Do soft.....	3/11 @ 4/2 1/2	2/10 1/4 @ 3/1 1/2	3/6 1/4 @ 3/9 1/4
Negroheads, scrappy.....	3/2 @ 3/3 1/4	2/3 1/2 @ 2/6	2/9 @ 2/9 1/4
Do Islands.....	2/5 1/2 @ 2/10 1/2	—	1/10 @ 2/0 1/2
Bolivian.....	4/2 1/2 @ 4/3 1/2	3/0 1/4 @ 3/3	3/7

PRICES PAID IN SEPTEMBER.

	1903.	1902.	1901.
Pará fine, hard.....	4/2 @ 4/8 1/4	3/1 1/2 @ 3/4	3/7 @ 3/8
Do soft.....	4/2 @ 4/7 3/4	—	3/7 3/4 @ 3/9 1/4
Negroheads, scrappy.....	3/3 1/2 @ 3/8 1/2	2/7	2/8 @ 2/9
Do Islands.....	2/6 @ 2/9	1/11 3/4	2/0 1/2
Bolivian.....	4/4 @ 4/8 1/2	3/1 3/4 @ 3/4	3/9

OCTOBER 16.—A large business has been done in Pará sorts during the week, at declining prices, but at the close the market is firmer, with an advance of 1d. per pound. Fine hard is worth 4s. 4 1/2d. spot and 4s. 4d. for forward delivery, and soft 4s. 2d. spot and buyers of forward delivery at 4s. 1 1/2d., but no sellers. Scrappy negroheads quiet; Cametas lower, and some forced sales at 2s. 5 1/2d. @ 2s. 5 3/4d. Peruvian ball 3s. 4 1/2d. @ 3s. 5d.; slab 2s. 9d.; scrappy 3s. 6d. At to day's auctions Central American, Mozambique, and Madagascar rubbers met an active demand, and extreme rates were obtained for some specially attractive lots. Colombian: good clean brown scrap 3s. 4d.; fair to good black sheet and scrap mixed virgin 3s. 1 3/4d. @ 3s. 2 1/4d.; inferior part heated 2s. 8d. @ 3s.; white scrap and sheet 2s. 10d. @ 3s. Madagascar (Majunga): fair scrappy 2s. 6 1/2d. @ 2s. 8d.; mixed black coated and spongy 2s. 3d. @ 2s. 5 1/4d. Mozambique: fine clean red small ball, 3s. 11 1/4d.; fair to good 3s. 8d. @ 3s. 9 3/4d.; rather weak, part sandy 3s. 5 3/4d.; stickless sausage rather mixed 3s. 8d.; fair to good Beira ball and sausage 3s. 7 1/2d. @ 3s. 8d.; Lama ball white part sandy 3s. 4d.; sandy reddish ball 2s. 7d.

CULTIVATED RUBBER—"PARA" QUALITY.

OCTOBER 2.—Ceylon fine biscuits 4s. 9 1/4d. [= \$1.15 1/2]; scrap 3s. 6d. Straits Settlements fine 4s. 9 1/4d.; scrap 3s. 3d.

OCTOBER 16.—Ceylon fine 4s. 5d. @ 4s. 6d [= \$1.07 @ \$1.09]; scrap 3s. @ 3s. 3d.

Bordeaux.

R. HENRY favors THE INDIA RUBBER WORLD with details of arrivals for 1903 which permit the record to be brought down to October 1, as follows [in kilograms]:

GRADES.	Jan.-June.	Jul.-Aug.	Sept.	Total.
Soudan twists.....				
Soudan niggers.....				
Conakry niggers.....				
Gambia.....	77,000	4,500	4,900	86,400
Bassam.....	25,500	2,400	150	28,050
Lahou.....	—	2,166	300	2,466
Madagascar.....	—	1,900	200	2,100
Java.....	—	1,500	—	1,500
Congo sorts.....	18,000	8,500	9,500	36,000
Mexican.....	1,500	—	—	1,500
Other sorts.....	600	—	—	600
Totals.....	478,800	199,066	103,650	781,516

Total arrivals for the whole of 1902 were 678,400 kilos and in the preceding year only 235,380 kilos.

PRICES OCTOBER 10 IN FRANCS PER KILOGRAM.

Sierra Leone sorts:	Bassam lumps.....	5.90 @ 6.70
Niggers, red I. to 30 @ 10.45	Bassam cakes.....	7.40 @ 8.50
Niggers, white, I. to 10 @ 10.30	Lahou twists.....	6.70 @ 6.95
Niggers, II.....	Majunga.....	7.40 @ 7.50
Niggers, III.....	Tamatave.....	8. @ 9.15
Twists.....	Madagascar niggers.	4.30 @ 7.75
Cassamance.....	New Caledonia.....	8. @ 8.50
Gold Coast lumps...		6.70 @ 6.95

Liverpool.

WILLIAM WRIGHT & Co. report [October 1]:

Fine Pará—As anticipated in ours of last month, a further advance has taken place. The statistical position has made itself felt. Strong

buying from America, with small stocks and supplies, has resulted in an advance of 5d. per pound. The position is still extremely strong, the market being very bare of supplies; stocks are smaller than they have ever been for years, and supplies due in October are small. Everything points to a further advance next month, as the demand, even though manufacturers are only buying when forced to, has overtaken the supply.

Africans, in sympathy with Pará, are dearer and in good request; stocks are very small, especially for the better grades.

FRED. STERN & Co., 1, Harrington street, Liverpool, announce that they are successors to the late firm of Kramrisch & Co., India-rubber merchants in the same city.

EDMUND SCHLÜTER & Co. report Liverpool stocks:

	Aug. 31.	Sept. 30.		Aug. 31.	Sept 30.
Pará—1st hands..	349	82 tons.	Peruvians.....	150	31 tons.
Fine.....	260	43 "	Africans.....	305	217 "
Medium.....	43	19 "	Mollendo.....	81	420 pkg.
Negroheads.....	46	29 "	Mangabeira.....	21	122 "
Pará—2d hands..	301	161 "	Pernambuco.....	45	111 "
Fine.....	246	131 "	Maniçoba.....	90	1023 "
Medium.....	20	9 "	Ceará.....	—	174 "
Negroheads.....	35	21 "	Assare.....	21	152 "
Total Pará.....	650	243 "			

Rubber Receipts at Manaos.

DURING September and the first three months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	SEPTEMBER.			JULY-SEPTEMBER.		
	1903.	1902.	1901.	1903.	1902.	1901.
Rio Purús..... <i>tons</i>	424	271	320	886	768	880
Rio Madeira.....	263	188	42	755	734	594
Rio Juruá.....	254	227	244	256	231	304
Rio Javary—Iquitos.....	71	55	40	185	155	155
Rio Solimões.....	59	114	177	84	163	257
Rio Negro.....	—	44	1	15	65	16
Total.....	1076	899	824	2181	2116	2206
Caucho.....	133	43	150	341	259	391
Total.....	1209	942	974	2522	2375	2597

Gutta-Percha.

WEISE & Co. (Rotterdam) report exports from Singapore for the first eight months of five years past as follows:

	1899.	1900.	1901.	1902.	1903.
Tons.....	3757	3708	3756	2744	2353

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

September 28.—By the steamer *Prins Willem*, from Orinoco:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total
Middleton & Co.....	10,000	.....	.....	.....	10,000

October 3.—By the steamer *Poly carp*, from Pará:

United States Rubber Co.	31,000	6,600	35,000	.....	72,600
Poel & Arnold.....	32,100	7,500	31,600	.....	71,200
William Wright & Co....	6,000	700	63,100	.....	69,800
A. T. Morse & Co.....	31,900	4,800	8,100	900=	45,700
New York Commercial Co.	12,100	3,200	4,800	2,300=	22,400
L. Hagenaers & Co.....	2,800	.....	2,100	.....	4,900

Total..... 115,900 22,800 144,700 3,200= 286,600

October 14.—By the steamer *Gregory*, from Manáos and Pará:

United States Rubber Co.	143,700	19,900	73,200	.....	236,800
New York Commercial Co.	90,000	38,700	15,500	600=	144,800
William Wright & Co....	79,600	6,200	47,900	500=	134,200
A. T. Morse & Co.....	30,300	4,200	79,500	3,000=	117,000
Poel & Arnold.....	40,000	7,100	23,700	1,700=	72,500
Thomsen & Co.....	10,700	1,200	6,200	.....	18,100
L. Hagenaers & Co.....	8,500	.....	3,700	.....	12,200

Total..... 402,800 77,300 249,700 5,800= 735,600

October 21.—By the steamer *Sobralense*, from Manáos and Pará:

A. T. Morse & Co.....	74,500	11,900	150,500	15,400=	252,300
Poel & Arnold.....	58,100	13,300	62,200	4,500=	138,100
William Wright & Co....	67,900	7,300	41,400	.....	116,600
United States Rubber Co.	10,700	2,400	30,900	.....	44,000
Hagemeyer & Brunn....	33,700	3,100	6,000	.....	42,800
L. Hagenaers & Co.....	17,100	.....	4,600	.....	21,700
New York Commercial Co.	5,100	2,100	1,800	.....	9,000

Total..... 267,100 40,100 297,400 19,400= 624,500

[NOTE.—The steamer *Cearense*, due at New York on November 4, has on board 430 tons of Rubber.]

	POUNDS.
SEPT. 23.--By the <i>Pennsylvania</i> =Hamburg:	
To Order.....	6,500
OCT. 9.--By the <i>Phœnix</i> =Hamburg:	
To Order.....	3,500
OCT. 14.--By the <i>Oceanic</i> =Liverpool:	
Earle Brothers.....	7,000
OCT. 14.--By the <i>Kennebec</i> =Singapore:	
William Wright & Co.....	1,000

BALATA.

OCT. 19.—By the *Maraval*=Trinidad:
Cadenas & Coe..... 2,500

Exports:

India-rubber..... 311,829 \$204,081
Reclaimed rubber..... 86,689 10,211
Rubber Scrap Imported..... 815,067 \$44,427

SEPT. 19.—By the *Vaderland*=Antwerp:

George A. Alden & Co.—African..... 101,957
[Reported in New York arrivals in our last issue.]

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—SEPTEMBER.

Imports:

	POUNDS.	VALUE.
India-rubber.....	3,987,669	\$2,729,974
Gutta-percha.....	9,929	7,239
Gutta-jelutong (Pontianak).....	791,416	22,177
Total.....	3,788,954	\$2,759,390

BOSTON ARRIVALS.

SEPT. 1.—By the *Bohemian*=Liverpool:
George A. Alden & Co.—African..... 2,740
SEPT. 1.—By the *New England*=Liverpool:
George A. Alden & Co.—African..... 7,101
SEPT. 5.—By the *Ivernia*=Liverpool:
George A. Alden & Co.—African..... 3,125

POUNDS.
Total..... 187,389
[Value, \$136,616.]

GUTTA-PERCHA.

SEPT. 14.—By the *Lancastrian*=London:
Poel & Arnold..... 2,024

SEPTEMBER EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Frank da Costa & Co.....	69,078	11,468	114,412	1,950	196,908	34,176	1,780	37,272	—	73,228	270,136
Cmok, Schrader & Co.....	5,780	2,040	46,660	—	54,480	133,280	16,830	51,160	600	201,870	256,350
Neale & Staats.....	—	—	107,756	—	107,756	60,333	7,203	1,580	—	69,116	176,872
Adelbert H. Alden.....	26,430	16,320	7,220	135	50,105	30,140	3,910	32,450	3,162	69,662	119,767
Denis Crouan & Co.....	21,778	1,681	39,785	—	63,244	1,668	—	—	—	1,668	64,912
J. Marques.....	6,189	770	4,774	—	11,733	23,195	2,021	17,048	—	42,264	53,997
Pires, Teixeira & Co.....	10,635	586	5,127	—	16,348	4,898	—	3,324	—	8,222	24,570
Kanthack & Co.....	—	—	—	—	—	11,963	944	6,153	—	19,060	19,060
Direct from Iquitos.....	—	—	—	—	—	43,411	14,159	9,682	85,792	153,044	153,044
Direct from Itacoatiara.....	—	—	—	—	—	335	—	119	—	454	454
Direct from Manáos.....	242,618	46,317	44,506	3,822	337,263	256,710	62,240	44,612	16,510	380,072	717,335
Total for September.....	382,508	79,182	370,240	5,907	837,837	600,109	109,087	203,400	106,064	1,018,660	1,856,497
Total for January-August.....	4,599,938	1,121,178	3,258,615	1,070,119	10,049,850	5,500,571	684,430	1,598,695	2,560,912	10,344,608	20,394,458
TOTAL SINCE JANUARY 1.....	4,982,446	1,200,360	3,628,855	1,076,026	10,887,687	6,100,680	793,517	1,802,095	2,666,976	11,363,268	22,250,955

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903.....	3,115,399	233,303	2,882,096	August, 1903.....	2,890,160	2,414,160	476,000
January-July.....	35,539,720	1,751,513	33,788,207	January-July.....	32,200,112	23,013,872	9,186,240
Eight months, 1903.....	38,655,119	1,984,816	36,670,303	Eight months, 1903.....	35,090,272	25,428,032	9,662,240
Eight months, 1902.....	33,754,506	2,300,776	31,453,730	Eight months, 1902.....	31,948,784	20,225,968	11,722,816
Eight months, 1901.....	37,137,470	2,656,064	34,481,406	Eight months, 1901.....	35,513,520	21,383,488	14,130,032

GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903.....	2,305,380	557,260	1,748,120	August, 1903.....	54,560	—	54,560
January-July.....	21,163,560	7,211,160	13,952,400	January-July.....	1,021,240	100,760	920,480
Eight months, 1903.....	23,468,940	7,768,420	15,700,520	Eight months, 1903.....	1,075,800	100,760	975,040
Eight months, 1902.....	22,307,780	8,774,260	13,533,520	Eight months, 1902.....	964,260	81,620	882,640
Eight months, 1901.....	19,126,140	6,601,320	12,524,820	Eight months, 1901.....	1,048,300	92,840	955,460

FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
August, 1903.....	1,086,586	818,180	268,400	August, 1903.....	260,920	440	260,480
January-July.....	9,651,840	5,300,020	4,351,820	January-July.....	1,723,480	16,720	1,706,760
Eight months, 1903.....	10,738,420	6,118,200	4,620,220	Eight months, 1903.....	1,984,400	17,160	1,967,240
Eight months, 1902.....	11,573,160	5,625,840	5,952,320	Eight months, 1902.....	1,742,840	11,000	1,731,840
Eight months, 1901.....	11,243,320	7,001,500	4,241,820	Eight months, 1901.....	1,727,220	19,580	1,707,640

BELGIUM †				NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.				
August, 1903.....	—	—	—				
January-July.....	4,017,768	3,079,496	938,272				
Eight months, 1903.....	—	—	—				
Eight months, 1902.....	—	—	—				
Eight months, 1901.....	—	—	—				

*General Commerce.

†Special Commerce.

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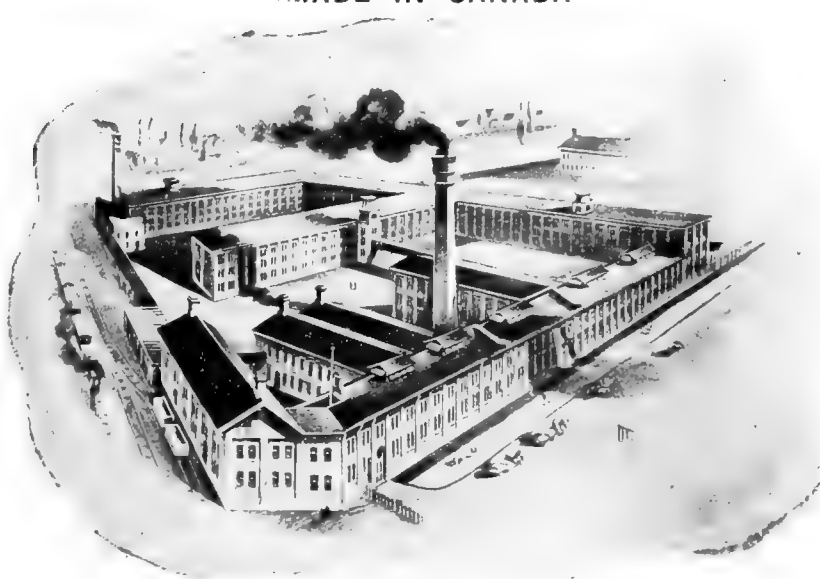
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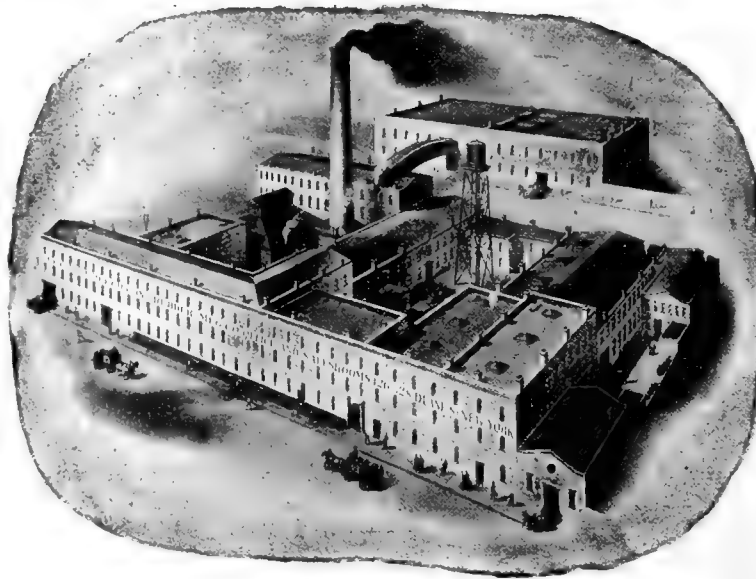
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THE OPENING FOR RUBBER EXPERTS.

NOT a few letters reach us from time to time inquiring about the outlook in the India-rubber industry for a young man of technical training. Such a letter is now before us, the writer of which, having become much interested in rubber in the course of his studies in a scientific school, is moved to ask "if there is any field for rubber experts?" We assume that his inquiry relates to the rubber factory, and shall venture to answer accordingly, though scientific work is beginning to be called for in the production of rubber no less than in the manufacture of rubber goods.

The opportunities in rubber factories for technically trained men are doubtless increasing, owing to the fact that rubber manufacturers, in common with all others, are coming to realize more fully the advantages of modern scientific methods of systematic study of the conditions and problems connected with their industry. The single fact that the leading railway companies now demand that their more important supplies of rubber goods shall conform to definitely specified requirements in construction and quality, has a far reaching significance and influence with the manufacturers. They are awaking in general to the value of the scientific method, and are gradually dropping antiquated machinery and processes and even relaxing the traditional secrecy that has so long hampered progress in the rubber industry.

The man with a technical education has ample opportunities in many industries, and generally in proportion to the magnitude of the industry. The financial success of the Standard Oil Co., for example, has been due to nothing else so much as to the expert scientific work which the directors of that great corporation have been wise enough to employ, in utilizing to the utmost every constituent of their raw material, and at a minimum cost, so as to place the products within the reach of the greatest possible number of buyers. And the great prominence of the steel industry is a direct result of chemical science. The rubber industry is especially inviting to the chemist or chemical engineer, and while the total volume of the industry must ever remain small in comparison with some others, and the possible financial reward of the scientific worker may not be so great, there must always be desirable positions open for expert work of the right kind. Successful competition in the rubber industry, as in every other, demands a scientific knowledge of the possibilities of the materials employed and thorough study of the economics of manufacture. This means the devotion of somebody to the mastery of these details and, in the end, advantage to the company employing him. The crowded scientific schools of the United States—not to mention those elsewhere—and the wide extending clientele of the correspondence schools, attest the extensive development of an influence which is to react on the industries of the nation and, through the work of trained men, modernize and advance the methods of manufacture in every line.

The literature of India-rubber, of comparatively recent origin, is rapidly growing in volume and becoming more

important in quality. For a generation after the discovery of vulcanization there was practically nothing available for the "rubber man's library" outside of a single work each by Goodyear and Hancock—books which now possess little more than historic value. Twenty years ago there did not exist so much as a trade journal devoted to rubber interests. To-day, while the number of volumes devoted to rubber science is not extensive, a few books have appeared which are particularly notable in helping to make clear some of the complex problems connected with the nature of India-rubber, and its employment in industry, while in several journals devoted exclusively to the trade, as well as in a host of other technical journals, there are constantly appearing articles by competent men which mark a distinct advance in our knowledge of rubber, and which cannot fail to prove of benefit to the rubber industry and all who are employed therein. All of this is the outcome of expert investigation done in connection with rubber, and in this utilitarian age such work would not be persisted in for the mere love of labor; somebody is benefiting by it.

We are far from belittling the work of the founders of the rubber industry, none of whom were men of scientific training. It is vastly to their credit that, imbued with an idea of the possibilities of the industry, they struggled against so many disadvantages and wrought so much. But they were contemporaries of men in other industries who groped in the dark and made discoveries often by accident. Constantly working with their hands, their minds became trained through thinking over the results. The more modern idea is to start with a trained mind, for the better guidance of the hands. Not that every technical graduate may hope to step into a rubber factory and displace a graduate from the mill room who was at work before the college man was born; he may count himself fortunate if he ever knows as much as the older man has learned about rubber under the old *régime*. But the time must come when, with two boys starting in life together, and both made of the same material, the one with a technical preparation will have a better chance for a high position in the rubber industry than the one who laboriously educates himself in the factory.

. RUBBER PLANTING IN CEYLON.

CEYLON is experiencing a veritable "boom" in the rubber planting interest, evidenced by the organization of many joint stock companies for the opening of new plantations on an extensive scale. The new companies are basing their estimates of profits upon the success attained by a number of tea planters who are already producing rubber on a small scale, and the further fact that considerable private planting of more recent date gives promise of equally good results. There certainly is encouragement to be found in the early productiveness of the *Hevea* species in Ceylon, as compared with the same trees in Brazil, in the rate of yield, in the quality of rubber produced, and the high prices obtained in London. It does not follow, however, that uniform success is to be attained

in every case, or that all the promises of the company prospectuses can be made good, especially where a heavy initial outlay is made for some estate which has proved unremunerative under other crops, or if an expensive administrative system is planned. But every business is bound to show some failures, and the prospect for rubber culture in Ceylon, on the whole, appears distinctly favorable.

The financial details of the new Ceylon companies may be of interest to those engaged in forming rubber planting companies elsewhere. The articles of association provide generally for a "nominal" capital of a certain amount, in shares of 100 rupees [= £6 13s. 4d., or \$32.44]. An "initial issue" of shares of less than the whole capital is offered for public subscription, to apply to purchase money and to provide the first working capital. The intention is to issue shares only as development capital is needed, through a term of several years. The vendors of lands, improved or otherwise, as a rule accept shares in part payment. Generally tea or coffee or some other product already on an estate is mentioned as promising returns during the period required for the development of rubber, though no definite rate of dividend is assured. But estimates are given of the cost of cultivation and management, and the expected return of rubber, so that, even in the event of a decline in price, "there still remains a very handsome profit." A circumstance favorable to the new undertakings is the fact that the large tea plantations of Ceylon as a rule are owned and managed by joint stock companies, so that the investing public there is accustomed to putting money into planting enterprises, and much English capital has also been placed there in this way.

The Ceylon press has properly advised some caution in regard to the new planting interest. For example, where company prospectuses, referring to current London prices of Ceylon rubber, have provided for the contingency of a fall of 33½ per cent. before the new plantations are productive, the *Times of Ceylon* suggests that the figure should be 50 per cent. Another suggestion by the same journal is the possible danger of the rubber tree in Ceylon suffering from pests or maladies. Already some discussion has appeared in that journal on the rubber "canker," which is being investigated by Mr. J. B. Carruthers, the government mycologist. Mr. R. W. Harrison, chairman of the Kalutara Planters' Association, having objected to any public mention of the matter as injudicious, the editor of the *Times of Ceylon* remarks:

Most of us remember the indignation of the cacao planters at the publicity which helped so much to secure scientific aid in time to put that industry on its feet again. Nowadays planters are better off, and there is more prompt attention given both by producers and by the agricultural department to the first indications of trouble; but it is useless to demand secrecy which would do more than anything else to undermine public confidence.

It would be strange if the acclimatization of the *Hevea* in Asia should be unaccompanied by some malady to which it has not been known to be subject in America. The transference of some other economic plants from their native *habitat* has developed in them unfavorable conditions which in time have been remedied by science, and

this very fact should prevent the complete discouragement of the Ceylon rubber planters at the first indication of any troubles with their trees.

THE ACRE SETTLEMENT.

THE effective protest made by the Brazilian government against the terms of the "Acre concession" granted by Bolivia to the Bolivian Syndicate, the details of which we printed in April last, was followed by diplomatic negotiations between the two republics, the result of which already is a treaty about to be signed, and which, on its face, would appear likely to prove mutually advantageous. Brazil will have more territory and more revenue, and Bolivia has in prospect the better development of the territory left to her.

Bolivia, it is true, quits all claim to the greater part of the disputed Acre district, an area of about 66,000 square miles, generally regarded as the richest rubber district in the world, and having other resources worth considering. But this territory, on account of its remoteness from the seat of government and the difficulties of communication, had never been administered with success by Bolivia, while capital was lacking in the country for its commercial development. When an attempt was made, a year or two ago, to induce the investment of foreign capital on a large scale, the opposition of Brazil, in refusing transit through her territory, completely blocked the only outlet to the sea, thus rendering the Acre grant of little value.

The fact is that the contention of the Brazilians that the Acre district belongs naturally to their country has some foundation. It is accessible only by means of water courses which flow through Brazil into the Amazon, being thus only an extension of the Amazon watershed. Besides, such population as exists in the territory, apart from the Indians, consists mainly of Brazilians who have ventured there in quest of rubber, without protection or encouragement from Bolivia. Any attempt of Bolivia to extend its authority over these people was resented by them, while Brazil held that her citizens on the Acre had acquired rights by the mere act of settlement in hitherto unoccupied territory.

Bolivia had, however, certain rights under old treaties, though these were capable of different constructions, and in consideration of these Brazil agrees to pay a cash indemnity, to grant perpetual free transit through her territory, and, what promises to be of most importance, to construct a railway around the obstructions in the Madeira, the most important of Bolivia's natural outlets. The extensive system of rivers, draining a much larger portion of Bolivia than the whole Acre region, and a portion which has been developed to a greater extent, converges to form the Madeira, which in turn discharges into the Amazon. But for a series of formidable cataracts in the Madeira, Bolivia would have a system of waterways for internal communication such as is not surpassed in any other country, the whole connecting with the seaboard. The proposal to build a railway around the falls—a distance of 200 miles or more—is not new, but the expense

involved in a country without capital and where much time must elapse before such an undertaking could become commercially profitable, have prevented such an undertaking from being carried out.

If the Brazilian part of the new agreement is carried out in good faith, within a reasonable time, Bolivia as a whole should be in a better condition than if the plans of the Bolivian Syndicate had been left undisturbed, since the proposed field of operation of the latter was confined to the single territory of the Acre, without regard to developing the districts watered by the sources of the Madeira. Another point is that by the cession of her Acre territory, Bolivia is relieved from a possible boundary dispute with Peru.

The interest of the outside world in the whole situation relates to the development of the rubber resources involved. While there were hopes that, under a liberal and progressive policy such as the Bolivian Syndicate proposed, the rubber fields of the Acre would be opened much more extensively, it must be considered that the world's ever growing demand for rubber will cause it to be marketed in some manner, under whatever jurisdiction, and the removal of the friction between the two nationalities on the Acre will doubtless do much to stimulate rubber working there. In 1898 the official estimate of the rubber output from the Acre was more than 2000 tons; in 1900, owing to political troubles, it was only about 800 tons. In 1901 there was a heavy increase, followed in the next year by more troubles and the closing of the rivers. Peace on the Acre, therefore, may be expected to result in a permanently large rubber yield.

As for the regions of the Beni and Madre de Dios, connecting with the Madeira, the high cost of transport over the latter river has made it preferable to ship such rubber as has been collected there over the mountains to the Pacific. With the Madeira opened to commerce by means of a railway, there is reason to believe that such development might follow there as in the almost identical case of the Congo. Before the construction of the railway first suggested by Stanley, all traffic with what is now the Congo Free State was conducted by means of portage, so that it was estimated that five years were required for a piece of cloth to find its way from the seaboard to regions which, with the help of about 200 miles of railway, are now reached in two or three weeks. The building up of a trade in Congo rubber of millions yearly has been due almost entirely to this little railway. The Bolivian rubber fields which the Madeira railway would open up are richer than anything in Africa, and the trees may be regarded as permanent, which is not true of the Congo rubber.

What assurance Brazil can give of building the promised railway is another matter. The cash indemnity promised to Bolivia should be easily arranged, by pledging the export duties on rubber from the Acre, which now becomes a Brazilian asset. But the relation of the government to the projected Madeira railway of twenty years ago, work on which was actually begun, under a guarantee of the public credit, must not be repeated if a railway is wanted now. And the history of the little street railway at Manáos,

the state subsidy for which, after being long in arrears, was finally paid in thirty-year bonds, is not such as to make any ordinary guarantee from the rubber states attractive to capitalists. Still, the world must have Bolivian rubber, and ultimately the necessity for better transportation through the Madeira valley will result in a railway, regardless of local help or hindrance.

THE BUSINESS MAN'S MONROE DOCTRINE.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Diplomacy in the United States has a few cardinal principles, the most familiar of which is the Monroe Doctrine. This doctrine is that the United States will regard the acquisition of new territory by a European power on the American continent as an unfriendly act. Expressed in less diplomatic language, the doctrine means that whoever in Europe has an American colony is welcome to keep it, unless, as happened in Cuba, he administers it so badly as to injure the United States. But if Europe wants to expand it must go away from America, north or south, or be prepared to go to war with Uncle Sam. This doctrine is not supposed to be exactly popular in some parts of the European continent, but all Europe knows it must be reckoned with in dealings with the United States.

It is getting on toward a century since this doctrine was announced, and yet it has remained thus far a possession of the diplomats alone. The opening years of the twentieth century seem a fitting time for an extension of the Monroe doctrine to business. There is no reason in the nature of things why the United States should not be the center of the manufacturing and commercial interests of the whole Western hemisphere. The man who wants to send money ought to find New York bankers prominently established in every considerable town on the American continent. The man who wants to ship freight from or to South America ought to find direct shipment at or to American ports the easiest method. The man who wants to buy a machine in Valparaiso or Caracas or Rio de Janeiro ought to find machines made in the United States leading the market. "Made in the United States of America" ought to be the prevailing recommendation of manufactured articles of all descriptions.

Now, as a matter of fact none of these things happen. There are important cities in South America where London or Paris exchange is easier to buy than New York funds. Passengers and shippers often use the route via Liverpool or Havre, rather than the direct route, simply because the means of direct transportation are insufficient. And though our manufacturers have within the past few years terrified Europe with their invasion, American-made goods cut no figure at all in the market in many parts of South America. The situation in this regard has indeed vastly improved within a few years. The needs of the rubber trade have caused the establishment of good lines of freight steamers between New York and Pará, American exchange and American manufactures are gaining steadily. And yet it cannot be said that the business world of the United States has a Monroe doctrine of its own.

There are, of course, obstacles to the establishment of such a doctrine. In some respects the field itself is less inviting than others more remote. Collections and credits are supposed to be harder to manage in Latin America than in Europe or China. Government is less stable there than anywhere else in the civilized world. And indisputably the stronger nations of South America dislike the United States.

There are obstacles, too, for which our own business men are

at fault. Until our new relations with Porto Rico, the Philippines, and Cuba made it necessary, practically no attention was given in this country to a study of colloquial Spanish. If a man wanted to do business in Spanish America he had to go and learn the language on the spot or hire a representative for his knowledge of Spanish without much regard to other qualifications. Nor have we sufficiently regarded the principle that the only way to success in business was to respect one's customers. If anyone in South America wanted something we made we have been willing enough to sell, but we have never taken the trouble to find out what South America wants and to satisfy the wants.

The establishment of a Monroe doctrine in business means a good many things. And first of all it means a respectful study of the field. Spanish must be taught and studied more widely even than it is now. The reasons for the instability of South American governments must be considered and it must be seen what business enterprise of the right sort will do to correct it. The popular dislike of the United States must be overcome by sending the right sort of men as representatives of business houses—men tactful, likable, frank, and cordial, who will enter into the habits and feelings of the men with whom they deal without loss of self-respect. And it must be overcome, too, by sending goods better than those that now hold the market. We like to believe that the United States does the best manufacturing in the world, as well as some of the worst. It is the best that gets and holds new markets. Spanish Americans are not so conservative as to prefer inferior goods because they are accustomed to them. Success in winning the market means sending superior goods in the care of representatives who know how to make their superiority manifest and to win the respect and liking of their customers. It means patience. Perhaps it may mean as long a waiting for large profits as is the case with cultivating rubber, but it will pay in the long run in more ways than one.

The Monroe doctrine of the business man can be established only by the business man himself. And it cannot be established in a minute by any one. Yet its establishment is one of the great opportunities of the present day, and we confidently expect to see the time when all the Western hemisphere will find its commercial as well as its political leadership in the United States.

J. L.

November 17, 1903.

A SHREWD DEAL IN RUBBER BOOTS.

BURIED in the middle of a long article in the *New York Evening Post*, on "Our Trade in Rubber," is the following bit of information, never before published to our knowledge, and which would indicate that every man who makes "big money" in this trade does not at once proclaim the fact from the housetops:

"When the great rush to the Alaskan goldfields began, in 1899 and 1900, an immediate demand for rubber shoes of all kinds and rubber boots was anticipated by shrewd dealers. One speculator, who had an eye to business, knew of a large lot of rubber boots and shoes which had been in storage here in New York for several years, a drug on the market. He also knew that the owners would be glad to get rid of them at almost any price. Going to a banker who had confidence in his judgment, the man borrowed enough to get the whole stock, shipped it to Seattle, Spokane, and Tacoma, Washington, and to Portland, Oregon, where miners were getting their outfits, and sold every pair at a large profit."

Wonder if there are any more such hidden stocks?

THE NATURE OF VULCANIZATION.*

WHAT is Vulcanized Rubber? It is somewhat surprising that there is no established definite meaning for a term which is in such common use. The reason for this doubtless is that its meaning varies according to the class of persons that uses it. To the general public, it has no special meaning except that the rubber articles so designated are adapted to the purposes for which they were intended. To the dealer in such articles, it means scarcely more. To the manufacturer, it means that these articles have been subjected to the final step of a very complicated process, and, as a result, possess certain physical qualities. To the chemist, and to him alone, it means rubber that has become chemically united with sulphur. He has in mind the chemical change that has taken place during the vulcanizing operation. The manufacturer has in mind only the physical properties belonging to the product. If a certain percentage of sulphur has become chemically combined with the rubber, the chemist says it is vulcanized, the manufacturer that it is not vulcanized unless it possesses certain physical properties.

It is evident that there are great changes in the physical properties of rubber that is well vulcanized, but it is not an easy matter to define in simple terms what these changes are. It is the common belief that vulcanized rubber is stronger more distensible, more elastic, and more durable than crude rubber. This is not, however, necessarily the case. Rubber freshly coagulated by the best methods is stronger, more distensible, and more elastic than almost any vulcanized rubber to be found on the market, a fact that is well known to those who are familiar with such crude rubber. Manufacturers are familiar with the fact that the durability of vulcanized rubber depends not so much upon the proper application of the vulcanizing operation as on its proper previous manipulation. Dr. C. O. Weber, who is probably the best authority on vulcanization, says in his excellent work, "The Chemistry of India-Rubber": "The physical state of the India-rubber colloid while under vulcanization largely determines the physical constants of the vulcanization product."

It is practically impossible to judge of the durability of most vulcanized rubber. Articles, to all appearances well vulcanized, may have within themselves the seeds of decay, which may develop in a few weeks, a few months, or not until after the lapse of several years. Manufacturers of vulcanized rubber threads—an article that probably requires more care in every step of the manufacture than any other—are accustomed to preserve and label one thread from each day's work for future reference. Some of these samples will remain sound for an indefinite period, others will begin to decay after five or six years, and others after two or three years. It is very seldom that any of the samples will show signs of decay sooner. And yet all have been subjected to precisely the same vulcanizing process; all were made of the same kind of rubber, the best in the market, and compounded precisely alike. These variations must have occurred through very slight differences in the physical condition of the samples at the time they were subjected to the vulcanization operation—differences so slight that they could not be detected by the most careful inspection, or the most careful chemical analysis, and which were brought about during the preparatory steps of the manufacture.

On the other hand, there is no uncertainty as to the durability

of crude rubber. Crude rubber of the best varieties will retain all its useful properties for an indefinite period if preserved from the action of sunlight and heat, which are fatal to both crude and vulcanized rubber. Unvulcanized rubber shoes, manufactured from Pará rubber, have been kept for more than half a century without showing signs of decay.

Perhaps the best general definition of the physical qualities of Vulcanized Rubber is that given by Charles Goodyear in his original patent of 1844—that it is not affected by the ordinary extremes of heat and cold nor by the ordinary solvents of rubber. But even this is not exact, for long continued heat, and long continued subjection to the action of its ordinary solvents, will affect it.

It is now generally considered that there is a chemical union of rubber and sulphur in vulcanized rubber and that the union is brought about or assisted by the action of heat. This union takes place only in the presence of the vapor of sulphur, and proceeds more or less rapidly according as the temperature is higher or lower. It is also considered that it is only dissociated sulphur vapor that can thus unite with rubber.

Sulphur, like camphor and iodine, can pass entirely into vapor from the solid state at a temperature not much above the ordinary. At ordinary temperatures its vapor has a perceptible tension, which may explain what is said to be a fact that thin sheets of rubber and sulphur become vulcanized when left to themselves a long time. The union of rubber and sulphur always requires time, as does the dissociation of sulphur. Rubber is a colloid and, like all colloidal substances, it submits to change but slowly. The union takes place throughout the substance of the rubber equally, if the temperature be equal throughout; that is to say, there is a gradual chemical union of rubber and sulphur until the process is complete. We would therefore expect to find, as is the case, the amount of combined sulphur in the rubber sulphide to vary from a very minute percentage to the largest ever found, which, in the case of hard rubber, is sometimes as high as 33 per cent. But the physical qualities of what we call vulcanized rubber are not found unless at least from 2 to 2½ per cent. of sulphur has combined with the rubber.

With every increase of temperature the rate of vulcanization increases rapidly, from the ordinary temperature to the highest commonly used, which does not exceed 350° F. From 256° to 270° F. is, however, the usual range for soft rubber goods, though many articles are vulcanized at lower temperatures. It is not clear why the vapor of sulphur is dissociated at these temperatures. The molecule of ordinary sulphur consists of 8 atoms of sulphur. At a temperature of 900° F. the molecule consists of 6 atoms and at 1800° F. of 2 atoms, which is the constitution of amorphous or colloidal sulphur. If such great temperatures are required to change the sulphur molecules of eight atoms to those composed of 6 and 2 atoms, why is it that in the presence of rubber the sulphur is dissociated at so low temperatures? The answer doubtless is that at the higher temperatures the sulphur molecules are all decomposed, while at the lower temperatures used in vulcanizing there is a mixture of undecomposed and decomposed molecules. But, in vulcanization, not only is the combined sulphur changed to amorphous or colloidal sulphur, but the uncombined sulphur of the compound also. Is it not possible that the rubber itself assists the dissociation of the sulphur? We know that colloidal substances,

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and rubber is a colloid, have the property under certain conditions of inducing the colloidal state in many crystalizable bodies. May not therefore the rubber colloid be capable of inducing the colloidal state in sulphur vapor?

The rate of vulcanization depends largely on the medium by which it is surrounded. If it be surrounded by air, it proceeds slower than if surrounded by any other medium in use. This is because air both receives and yields up heat very slowly. It cannot be heated to any appreciable extent except by contact and circulation, and it cannot give up its heat any more readily than it receives it. As rubber is a nonconductor of heat, we have here the worst possible combination for the transmission of the heat necessary to maintain the vulcanization at any particular temperature. When the surrounding medium is steam the rate of vulcanization at any particular temperature proceeds somewhat faster, as saturated steam yields up its heat quite freely if kept in circulation. If the medium be water under pressure, the circulation of the water maintains the desired temperature, and the loss of sulphur by evaporation is almost entirely prevented.

If the rubber being vulcanized is between heated iron plates, a quick vulcanization results, in consequence of the rapidity with which the plates yield up heat to the rubber. If the rubber be subjected to great pressure between the plates, the rate of vulcanization is still more rapid by reason of a closer contact between the iron and the rubber, which enables the latter to receive a greater supply of heat. By the latter method, a piece of rubber may be vulcanized in a few minutes, while several hours might be required to vulcanize it in air at the ordinary pressure. Thus the rate of vulcanization is not governed by the conductivity of the surrounding medium, for air, steam, and water are nonconductors, but at the rate at which the medium can yield up its heat.

There is a popular delusion that the manufacture of vulcanized rubber is an exact science—one which can be conducted in accordance with certain rules, with the certainty that, if so conducted, the product will always be vulcanized rubber goods which have the physical qualities necessary to render them durable and adapted to the various purposes for which they are intended. This delusion is not confined to the general public, but is held by many well educated persons who have had no practical experience in the art.

There is no fixed rule for the manufacturer to follow in the preparation of his goods for the vulcanizing operation, nor for the time or the temperature to be employed during that operation, and, from the nature of the case, there can be none. Each manufacturer has his own formulas and his own methods of attaining results, which must be strictly followed in minute detail to be of any practical use. The slightest deviation in any step of the process influences the final result. So well known is this to manufacturers that little effort is made to keep formulas or methods secret; in fact, "the possession of formulas, without the general ability, experience, and discretion that their proper use requires, is a damage rather than a blessing."

To accomplish the chemical union of rubber and sulphur, the time depends on the temperature, and the temperature on the time during which it is maintained. Whatever the temperature may be, within the limits usually employed, the rubber and sulphur continue to unite but the time must be adapted to the temperature. Again, a percentage of combined sulphur which in one rubber would produce sound merchantable goods, would, in another rubber result in a product having no commercial value whatever. Hence a chemical analysis of a sample cannot necessarily determine its commercial value.

All formulas for vulcanization must be adapted to the kind

of rubber employed, to the compounds incorporated with it, and to its previous manipulation. If in the same operation there be submitted to the vulcanizing process articles made from various kinds of rubber all prepared and compounded alike, some will be perfectly vulcanized and commercially valuable, but the remainder may have no commercial value, because different varieties of rubber require different methods of compounding and preparation, and also different times and temperatures during vulcanization. And so if several pieces of the same kind of rubber, even pieces of the same lump of crude rubber, be handled differently in the preparatory steps, the compound in each case being identically the same, and then all be submitted together to the same vulcanizing operation, some will be well vulcanized and commercially valuable, and the others may have no commercial value. For different degrees of mastication of crude rubber produce different physical conditions, and all such differences in physical condition are perpetuated by the vulcanizing process. Again, if various rubber samples, identically the same in every respect, be vulcanized by different processes, they will be physically unlike, even if vulcanized at the same temperature and with the same percentage of combined sulphur.

As Weber says: "There is no definite relation at all between the quantitative chemical result and the physical technical effect of the vulcanizing process, inasmuch as the same degree of vulcanization in the same kind of rubber need not result in the formation of identical vulcanization products."

With such numerous chances for the production of defective goods, manufacturers are extremely averse to making any changes either in materials or processes without having first convinced themselves, by the fullest investigation and experiment, of the utility of the proposed changes. This tendency of the manufacturers insures the public against the marketing of inferior or defective vulcanized rubber articles.

GERMAN OFFICIAL INTEREST IN RUBBER.

THE German minister of commerce, Herr Möller, has been visiting some of the leading rubber goods factories in his country, with a view to becoming personally acquainted with the conditions of the industry. Such a visit was made recently to the large works of the Continental Caoutchouc- und Guttaperchac-Ges., at Hanover, where the minister was escorted in automobiles from his hotel by several of the municipal officers, being welcomed at the factory by Directors Seligmann and Prinzhorn and the president of the board of control of the company. After being shown through the establishment, the minister spoke in flattering terms of the condition in which he had found it. He was especially pleased with the efforts made by the company for the welfare of their employes, and expressed much interest in the plans for houses for the workmen, for which the company had offered competitive prizes. The *Gummi-Zeitung* feels that the minister of commerce, by such visits, will be impressed with the importance of the rubber industry in Germany, and be led to feel that it deserves every encouragement by the government.

A TOWN DIVIDED OVER RUBBER HEELS.—The question of rubber heels for high school pupils is agitating Farmington. The principal has ruled that all must wear them and the school board upholds him, while many of the pupils and their parents feel that the order is infringement upon their personal privileges. Last week a score of pupils were expelled for refusing to wear the prescribed heels, and the war is now on in earnest.—*Portland (Maine) Press*.

PAPERS ON AIR BRAKE HOSE—I.

THE MANUFACTURE OF AIR BRAKE HOSE.

THE problem of how to make the best air brake hose in short lengths with capped ends has been the subject of much careful study, both by the manufacturers and the railroad experts. The first expedient of making hose in the usual 50 foot lengths, cutting into short pieces, and capping the ends, is no longer practiced by the more progressive makers of these goods. It, however, illustrates the general principles of rubber hose making, and will be described here for the information of those unfamiliar with the process.

The duck selected for air brake hose is generally 22 ounce, 40 inches wide, of long fiber cotton, and made "open" weave; *i. e.*,—not woven compactly as in the case of belting duck. This weight of duck gives the strength required to insure a hose of high bursting test, while the open texture affords the finished hose the desired flexibility or freedom to bend short without kinking, and also furnishes a better foundation for the application of the "friction" than a close texture duck. The term "friction" is used in a special sense in the rubber industry, and refers to that mode of application of the rubber stock to any fabric whereby it is made to penetrate the interstices of the weave, filling them with the gum compound, and also impregnating the surface fibers of the fabric. When applied to both sides of a fabric the goods resemble the well known adhesive tape, which is merely frictioned sheeting rolled and cut into ribbon-like width. The adhesiveness of frictioned fabric is derived from the tacky nature of raw or unvulcanized rubber and to no property of the friction process.

Vulcanization changes the tacky rubber stock into the familiar form of cured rubber. By this property surfaces that have been brought into close contact in the raw state are merged into each other without any seam or surface of union being apparent, or indeed existing. An open weave duck thus wrapped together in several bias plies is practically embedded in the rubber stock and held together, when cured, in a very effective way. To secure a still more secure binding of the plies the duck is often skim coated over the friction surface of one side. This causes a film of rubber to intervene between the plies when the fabric is wrapped upon itself as in building up a hose.

The method of applying a friction coat on a fabric consists simply of passing the material through the calender at a slower speed than that at which the thoroughly softened rubber mass is being carried around on the middle roll of the machine. This difference of speed results in a "friction" between fabric and rubber, with the effect of crowding the gum into the structure of the cloth. The application of a skim or even motion coat is accomplished by passing the fabric through the calender at the same speed as the rubber. In this case the lay of rubber on the middle roll is simply transferred to the surface of the cloth without penetrating it. If the goods have previously been frictioned the skim coat has a very secure attachment. Turning now to the preparation of the material for the tube. If it is to be machine made the stock is forced from a tubing machine and received on an endless apron conveyor which conducts it away from the machine ready for slipping onto the hose mandrel.

If the tube is to be hand made of a number of superimposed layers, the sheet is produced by coating the stock the requisite number of times on an apron passed through the calender. From this apron the sheet is stripped in the cutting room and cut into strips of appropriate width for the various sizes, then

rolled in clean, narrow linings for the convenience of the hose makers. The tube is formed around the mandrel by joining the overlapping edges of the tacky raw stock upon itself. The side of the sheet which forms the inside of the tube having first been dusted with soapstone to assist, as a lubricant, in the subsequent removal of the hose from the mandrel. Generally in hand work a second tube sheet is applied over and breaking joint with the first and both are carefully rolled into union to exclude all air and consequent danger of blisters.

The friction duck having been cut diagonally into suitable width to provide the requisite number of plies, these diagonal pieces are joined end to end, with seams overlapping about three quarters of an inch, to form a bias strip fifty feet in length. The object of applying the weave of the fabric diagonally to the length of the hose is to secure flexibility and balance the strength of the warp and filling of the duck in the structure of the hose. It would be impossible to coil smoothly—*i. e.*, without kinks, a length of hose made straightway of the fabric. One edge of the bias duck strip being attached to the tube on the mandrel it is rolled down by hand for the first ply around, using concave rollers. The completion of the wrapping is further accomplished by power rolling in a 50 foot three roll machine.

A cross section of this hose machine would show the rolls disposed in an equilateral triangle separated by the hose mandrel in the center. The ply of rubber forming the cover is generally wrapped around the hose as an attachment to the outer edge of the last duck ply. A few moments combined compression and rolling is sufficient to exclude the air and effect an intimate union of the respective parts of tube, duck and cover. The next operation, if air brake hose is to be the product, is to cut the long hose into short pieces while it is revolving, as in a lathe, in the hose machine. Being then withdrawn from the mandrel, the ends receive an application of rubber cement in order to attach the raw gum washers which form the capping to exclude the moisture from the duck. Next comes the attachment of the various brands or labels for the identification of the hose. These labels are preferably made by applying thin sheets of raw colored rubber backed with thin embossed sheet metal negatives. These metal negatives are easily removed from the hose after curing and leave the colored label with its markings sharply defined. The labeled short lengths, still uncured, are mounted on a 50 foot mandrel, each section separated by a metal or hard rubber ring to prevent the sections curing together end to end. Thus arranged the goods are wrapped first with a straight narrow wet strip of sheeting and subsequently cross wrapped with a two or three inch wide wet strip of sheeting applied spirally. This process of wrapping takes place in a similar three roll machine to that used in making the original 50 foot hose.

The object of wrapping is not only to hold the parts of the hose compactly together, and in close contact with the mandrel which determines the internal diameter, but it also serves to prevent damage and adhesion of the hose when piled together in the car in which they are cured in the vulcanizing chamber. The vulcanization or "cure" is effected in an atmosphere of steam and varies in length and temperature with the nature of the goods and the compounds entering into them.

The chief objection to cutting up long hose for making air brake lengths, is that of expense. The more progressive com-

panies have adopted the practice of making the short capped end lengths at once, thus effecting a saving in cost and beside securing perfect exactness as to dimensions and enlargement of ends; better workmanship throughout producing goods more accurately capped and free from twists and internal convolutions of the duck which produce serious irregularities in the tube thickness. Hand made tube for hose seems to receive the special endorsement of many users of air brake and other hose.

In this particular as in most others it is true that machine made goods are more uniformly reliable than hand made. High grade stock carefully refined and run from a tubing machine will produce a better inner tube for hose than can be made of the same stock by hand from a sheet because being seamless it is free from the liability of careless work in seaming up in the presence of soapstone dust which must be used, and is always liable to enter the seam and render the joint defective.

RUBBER FACTORY METHODS AND APPLIANCES.

MAKING PERFORATED RUBBER MATS.

PERFORATED or punched rubber mats are generally used in vestibules, elevators, and carriages, and are of sufficient importance to warrant more care and thought in manufacture than they generally receive. It is a frequent mistake to make these heavy low grade goods in sections of too great area, and they consequently get broken up long before they should, and the purchaser puts the blame just where it belongs, on the manufacturer, who should make his goods of whatever kind with some idea of adaptability to use. Another important point to be considered is the size of the perforations employed. They should not be large enough to permit the fingers to pass easily through them. For in that case the mat will surely be lifted about in this way and soon be broken, especially if the angles of the perforations are sharp instead of being rounded, which will secure greater resistance to tearing.

Mat stock generally is run in rolls, built up in plies in the calender on a sheeting back. The thickness usually is $\frac{1}{4}$, $\frac{3}{8}$, or $\frac{1}{2}$ inch. In making a mat the stock, of suitable size to allow for shrinkage in curing and trimming, is cut approximately by the pattern of the area to be covered. If it is to contain any inlaid letters or monograms these are put in at this stage by removing one ply of the mat stock and cementing in the colored letter stock. The stock is next semicured in a hydraulic press, on a smooth or corrugated plate according to the surface desired on the mat.

Before laying out the guide lines for the perforations the cloth back must be removed. This is accomplished by *thoroughly* wetting the sheeting with naphtha, and while still wet carefully drawing it back from the edges until it is entirely free from the stock. Great care is necessary at this point to prevent ignition of the naphtha gas by an electric spark due to friction. There is very little danger if plenty of naphtha is used, because the cloth will then separate very easily. The danger comes with the increased friction due to not wetting the cloth well with naphtha, and to undue haste in withdrawing the sheeting.

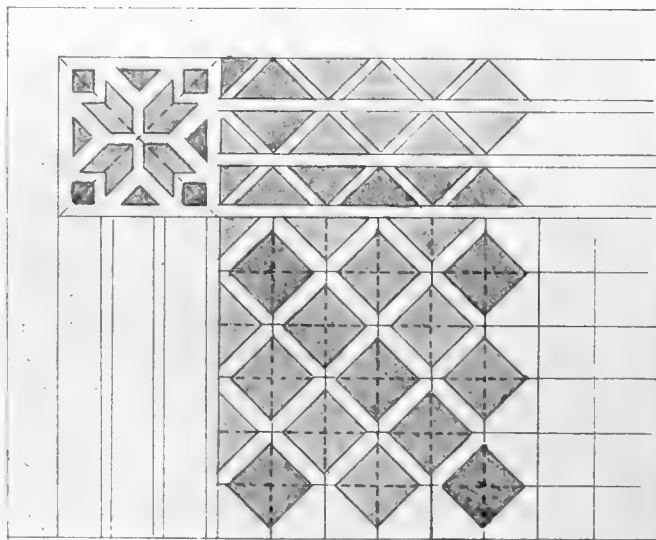
Guide lines for the pattern or design are marked on the stock and properly spaced to bring the perforations even all around. This can easily be done by carefully spacing the pattern both ways with the dividers and allowing the small amount

of odd space not needed in the center or border to go into the plain margin.

The various cutting dies are provided with handles and are driven through the stock with a mallet. A most convenient form of mallet is similar to that used by a stone cutter. It is made of firm fiber and rubber stock, weighing about 3 pounds, and fitted with a stout handle of hickory. The pattern is punched out with reference to the guide lines (as indicated in the accompanying figure) and carried across all the lettering by lightly applying the dies in such a way as not to mark the letters, but only to indicate faintly the parts of the design adjacent to the lettering but not completely overlaid by them. In this way the irregular perforations are indicated and are subsequently cut out with the aid of chisels, of which a considerable variety of sizes is needed. After perforation the mat receives

a final cure in open steam heat and the surface is finished by a simple application of harness soap or black lead in water and rubbed to a polish with a brush. In this way a very attractive finish is obtained and all traces of the guide lines used in the laying out of the mat are removed. Colored letters are wiped off with a little naphtha on a rag and the mat is completed by trimming to size.

This method of mat making is much more satisfactory than the old plan of punching the pattern through a stencil made of thin packing lightly cemented over the stock, or the other crude way of dusting the pattern onto the stock with chalk



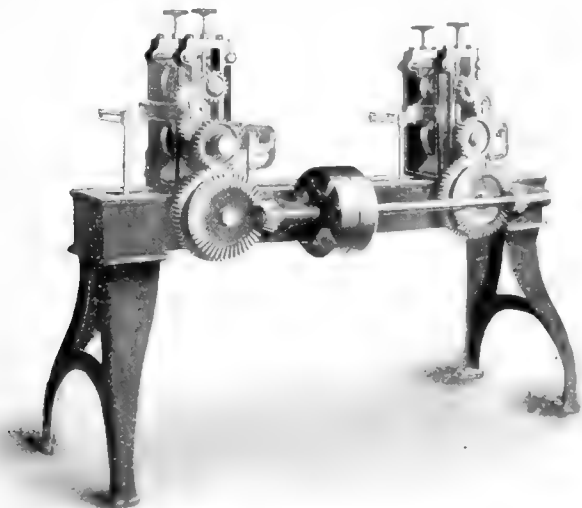
through a stencil. These methods are still in use, however, and certainly seem awkward when the design requires to be stenciled *on the back* of the stock, in the case of a corrugated mat, and the perforations punched out from the back.

MULTIPLE PLY INSULATION FOR WIRES.

A MOST perfect method for rubber covering electric wires has of recent years been discovered or developed, which practically supersedes the older method of drawing a single wire through the head of a tubing machine and forcing the rubber stock out around it as it passed through the die regulating the amount of stock applied. The newer method is designed to cover several wires at one and the same time, with one or more plies, but generally two, each ply united around the wire by a "butt" seam and made from calendered sheet stock. By this plan of insulation some very important advantages are secured

over the older tubing machine method. The two principal advantages are much greater speed of covering and consequently increased output. Also more perfect insulation, due to the possibility of applying the stock in two or more plies, thus remedying any defects in one ply by the stock in the next ply. By using calendered sheets of different colors the plies of the insulation are distinctly shown and the fact of double insulation in this way easily verified.

Several machines for performing this class of work have been devised. In general principle they are much alike. The material for insulation, in the form of thin sheet stock, is slit or cut into bands or strips of appropriate widths varying with the size and number of wires to be covered. The rubber strip is then placed on reels arranged to feed into the covering device folded around or laying both above and below the wires. The covering mechanism consists of sharp edged grooved rollers known as "caliper compression" type, because they both span the wire and compress the stock upon it. The groove takes in both wire and surrounding stock and by the revolving shear-like action of the rollers on each side of the wire the rubber sheet is compressed snugly to the wire and a butt joint or seam is neatly formed in the insulation close to the wire as the ex-



TWO HEAD RUBBER COVERING MACHINE.

cess of stock is sheared off. The knitting of the two parts of the sheet as it is sheared by the grooved edges of the rollers is dependent on the adhesive property of raw or unvulcanized rubber compound. By arranging the machine with the appropriate grooved covering rollers in two housings on the same frame, several wires at once may be successfully covered as they pass through and thus double insulation be effected with great rapidity.

Among recent developments in this class of rubber machinery may be mentioned that perfected by the New England Butt Co. (Providence, Rhode Island). This is a two head machine adapted for covering three wires with either one or two seam rubber covering. It is shown in an illustration on this page and consists of a rigid frame provided with heads driven by bevel gearing from the main shaft which runs along the side of the frame. The front head—that is, the head which covers the outside layer of rubber—is positively driven, while the rear heads are provided with friction devices which permit slightly different speeds of the wire on account of the differences in diameter. Each head is provided with compensating gearing, which allows the use of caliper compression rollers of different diameters. By this arrangement the rollers can be

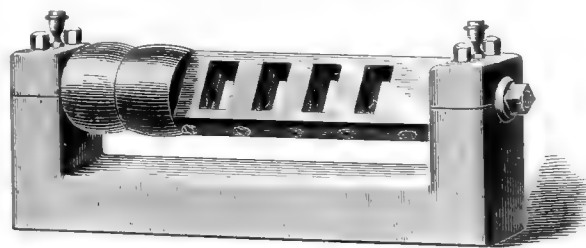
turned down when dull and used until considerably reduced in diameter. The heads are so arranged that the inside housing can be taken away in order to change the rollers, without removing the shafts, gears and bearings. Each head is provided at the back with a wire guide and adjustable rubber guide, and at the front with a pair of rollers to remove the rubber scrap automatically. When desired the machine is provided with a taping head, placed at the extreme end of the frame.

The machine shown in the illustration is intended for covering single wires or strands from No. 20 Browne & Sharpe gage to strands with an outside diameter over the covering of about one inch. This machine will also cover three wires at once, in sizes up to No. 12 Browne & Sharpe gage. Its capacity on No. 14 wire using the three groove cutters is 70,000 feet per day of ten hours. A larger machine is built for large size wires and cables, running from 1 inch to 2½ inches outside diameter of the covering.

MOLDING SOLID CARRIAGE TIRES.

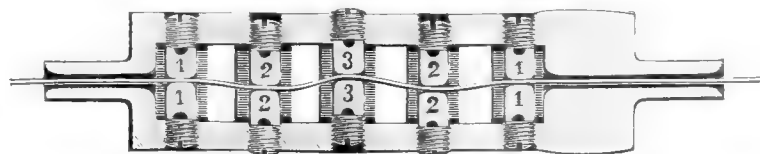
In the manufacture of solid carriage tires the tubing machine is indispensable. The stock must be mixed and handled at a temperature that will insure its not being burnt in the process. The various sizes are run as nearly as possible exact to a template of the finished goods. In some factories it is the practice to cold press the stock in wooden molds made in duplicate of the metal curing mold. In this way the tire is shaped and all excess of stock saved in the unvulcanized condition. The molding and curing takes place generally in lengths of 14 feet in an hydraulic press. The old method of clamping the stock in a mold and curing in open steam, being too slow and expensive, is now in disuse. A few factories are making solid tires in continuous length of any desired measure. This is merely a matter of making shift after shift and splicing, on account of the wires, which are generally about 16 feet.

The great difficulty formerly experienced in keeping the holes in their proper locations in the base of the tire, has been overcome by simply running the stock to exactly fit the molds and, in that way, the overflow of surplus stock is reduced to a minimum. In case there is much excess of stock in the mold; its escape sideways deflects the wires badly out of position and renders the tire worthless. With the stock carefully run to fit the molds it is only necessary to permit the straight wires to



FIVE DIE ROTARY WIRE STRAIGHTENER WITH LOOSE PULLEY.

lie in place during the curing with their ends protruding free. The precaution must be observed to keep the wires constantly straight. This can only be done by passing them regularly through some form of power straightener, after each removal from the tire. The usual form of straightener is the rotary



SECTIONAL VIEW OF FIVE DIE ROTARY WIRE STRAIGHTENER.

type, as made by The F. B. Shuster Co. (New Haven, Conn.) and shown in the illustrations. As the wire is drawn through the rapidly revolving dies its kinks are subjected to a smoothing out or straightening produced by the alternate centric and excentric pressure of the dies. Oil as a lubricant is applied, a few drops at a time, from a clean rag through which the wire is drawn before entering the machine. By this means a fine finish is given to the wire and the wear of the dies is lessened. The usual speed of the machine in straightening carriage tire wire is about 3000 revolutions per minute.

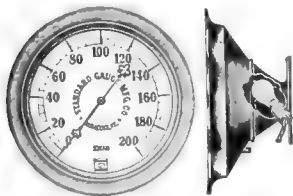
IMPROVED OPERATION OF DRY HEAT VULCANIZERS.

THE difficulty of maintaining a uniform distribution of heat in a dry heat vulcanizing chamber has been overcome by an invention by Augustus O. Bourn, of Providence, Rhode Island. [United States patent No. 735,059, August 4, 1903.] The result is attained by maintaining an enforced slow circulation of the vulcanizing element (by which is generally meant air) into and out of the vulcanizing chamber.

The apparatus consists simply of an exhaust fan drawing the hot air from immediately over the steam coil in the bottom of the vulcanizing chamber and returning it to the upper part of the chamber, thus agitating the air throughout the vulcanizer and thoroughly distributing the heat. It is found practicable to heat the air supply and force it from a single blowing or pumping apparatus into and through a number of vulcanizing chambers without the necessity of using a heating coil in each chamber, as heretofore. By dispensing with the use of heating coils within the chambers there is an increase in the available space for the reception of goods, owing to the absence of the coil; also, an increase of available space owing to the fact that when a heating coil is employed the excessive radiation of heat prevents the arranging of articles in close proximity to the coil.

ILLUMINATED DIAL GAGE.

THE illustration herewith refers to an illuminated face pressure gage, which will prove of great convenience in all power plants, where boilers are employed, where such an instrument may be located in a dark place or is required for use at night. A light placed in the opening at the back of the gage (generally an incandescent bulb) gives practically the same effect as an illuminated tower clock at night. When this device is used there is no chance of an error in locating the position of the indicating pointer. The illuminated dial gage is understood to be meeting with much favor among leading engineers, architects, and boiler manufacturers. [Standard Gauge Manufacturing Co., Syracuse, New York.]



DAMAGE SUIT AGAINST A RUBBER COMPANY.

WHEN the Diamond Rubber Co., in a spurt of generosity and advertising, put in a "gooseneck" with which to fill automobile tires at its place of business, the manager had no idea that a damage suit would result. But it did. Charles B. Harryman, a salesman, caught his foot in the "gooseneck," fell and broke his leg in two places. He asks \$9500 from the city of Denver, the Diamond Rubber Co., and Moritz Barth, owner of the building, and Judge Johnson has decided that all three must stand trial, agreeing with Attorney F. W. Parks, for Harryman, that a jury should have an opportunity to hear the facts as to the responsibility of all parties concerned.—*Denver (Colorado) Post*, November 3.

LITERATURE OF INDIA-RUBBER.

L'HEVEA ASIATIQUE. SUITE AUX "ÉTUDES POUR UNE PLANTATION d'Arbes a Caoutchouc" Par Octave J. A. Collet. Bruxelles: Librairie Falk Fils, 1904. [Paper. 8vo. Pp. 84.]

THIS is the latest of several publications of the Société d'Étude Coloniales de Belgique from the pen of a competent observer who has devoted much time of late to the products of the Malay states, and the second brochure in the series devoted to rubber culture. M. Collet has visited personally the more important plantations of *Hevea* rubber in the Malay states and Ceylon, noting the methods employed and the results obtained, and his work is of value as a trustworthy record of what has been done, and of no little interest in indicating the opinion of the author that the so called "Pará rubber" may be expected to yield better results under cultivation in Asia than in its natural *habitat* in the Amazon region. Eighteen excellent views from photographs represent the *Hevea* trees in various stages of growth under cultivation.

THERE is in press at Manila a report on the work done on India-rubber and Gutta-percha in the government laboratory there, which will form Bulletin No. 7 of that institution. It may be expected to contain the details of a process worked out in the laboratory for the extraction of a chemically pure Gutta-percha, referred to in THE INDIA RUBBER WORLD of August 1, 1903 (page 374).

IN CURRENT PERIODICALS.

LE Caoutchoutier de Céara. [Results of culture in different colonies.] = *Journal d'Agriculture Tropicale*, Paris. III-25 (July 31, 1903). Pp. 205-206.

Observações Sobre as Arvores de Borracha do Região Amazonica (Observations on the rubber trees of the Amazon region). By Dr. J. Huber, chief of the botanical section of the Pará Museum. = *Boletim do Museu Paraense*, Pará. III-3, 4 (December, 1902). Pp. 345-369.

Ule's Expedition nach den Kautschuk-Gebieten des Amazonasstromes—IV. By Ernst Ule. = *Notizblatt des königlichen botanischen Gartens und Museums zu Berlin*. IV-32 (August 30, 1903). Pp. 92-98.

Rubber Plantations in Mexico and Central America. [A carelessly edited résumé of information in late government reports.] = *The National Geographic Magazine*, Washington. XIV-11 (November, 1903). Pp. 408-414.

Le Caoutchouc en Rhodésie. By E. De Wildeman. [Based upon the reports of the British South Africa Co. which were reviewed in THE INDIA RUBBER WORLD, September 1, 1903—pages 425-426]. = *Revue des Cultures Coloniales*, Paris. XIII-132 (September 5, 1903). Pp. 134-136.

Les Caoutchoutiers de la Region Chari-Tchad [French Africa]. By Émil De Wildman. = *Industrie et Commerce du Caoutchouc*, Brussels. I-9 (September, 1903). Pp. 192-193.

Le Caoutchouc des Herbes. By Émil De Wildeman. = *Industrie et Commerce du Caoutchouc et la Gutta-Percha*, Brussels. I-2 (February, 1903). Pp. 25-28.

Rubber Tapping Experiments in the Botanic Gardens [at Singapore]. = *Agricultural Bulletin of the Straits*, Singapore. II-8 (August, 1903). Pp. 264-266.

Une Ferme à Caoutchouc à Ceylan. [Based upon a communication by F. J. Holloway to THE INDIA RUBBER WORLD, March 1, 1903—page 192] = *Journal d'Agriculture Tropicale*, Paris. III-27 (September 30, 1903). Pp. 273-275.

Rubbers and Fibers. By J. Cameron, F. L. S. [Paper read before the United Planters' Association at Bangalore, on planting results] = *The Indian Forester*, Allahabad. XXIX-10 (October, 1903). Pp. 475.

Note sur les Guttas. By Dr. Spire, of the botanical mission to Indo-China. [Relating to plantations in Java and the extraction of Gutta from leaves] = *Bulletin Économique*, Hanoi. VI-17 (May, 1903) Pp. 315-324. = Reprinted in *Revue des Cultures Coloniales*, Paris. XIII-130, 131 (August 5, 20, 1903). Pp. 78-81; 106-109.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

EVEN supposing the subject were sufficiently interesting to most of the readers of these notes, it would be a most difficult task to condense into a few paragraphs the volumes of speech being poured forth at the present time on Mr. Chamberlain's proposals. Among prominent representatives of our rubber factories Mr. Chamberlain can number supporters and detractors, but I am not in a position to say which party is numerically the greater. I may mention, however, that there are those who, while strongly denouncing the scheme for bolstering up trade with our colonies by preferential tariffs, and who loudly proclaim themselves Free Traders, are at the same time not at all adverse to the imposition of a duty upon manufactured rubber goods entering this country. The free traders' great point is that under this system all the requirements of a manufacture can be obtained in the cheapest market, thus enabling them to make goods of a superior quality for the same price of production prevailing in a protected country. This is what enables Great Britain, they say, to retain her hold upon foreign markets in spite of protective tariffs in the latter. One of the results of these tariffs, where they are sufficiently high, has been the establishment in the protected countries of works financed by foreign capital. The textile factories in Italy, Spain, and Portugal are evidence of this, and where the invaders have superior technical knowledge it is generally found that home firms get the worst of it in competition.

THE
FISCAL
QUESTION.

THE
WATERPROOF
TRADE.

THE present year, with its records in the way of rainfall, comes rather opportunely to one class of manufacturers, at all events, whatever may be its dire effects on the agricultural interest. Such continuous wet weather as we have experienced could hardly fail to bring about an improvement in the branch which has witnessed such a long period of depression, and there are indications on all sides that the deposed macintosh is again assuming prominence. And perhaps it is not altogether to be deplored that the business seems to be practically restricted to the better quality goods, the demand on the large scale for the cheap article of dubious rain-repelling properties not having at present, at all events, manifested itself. Of course it must not be assumed that the high class rainproof cloth has experienced any decided setback in popularity, because especially with regard to the product of Messrs. Mandleberg's works there is plenty of evidence to the contrary. The position is rather that the limitations of the rainproof article are now pretty well recognized, the natural sequence being a recognition that the wardrobe of those who have to be out and about in all sorts of weather is incomplete without both a rainproof and a macintosh. So much for generalities; with regard to the technical aspect there is nothing of particular novelty to record. From a general business point of view manufacturers do not look upon this branch of the rubber trade as likely to prove a remunerative one, and this because of the continued cutting of prices. There are too many in it, and the natural eagerness to get the trade has led to the adoption in some cases of tactics which must eventually prove detrimental to its development and stability. I am not referring furtively to the use of substitute instead of rubber; this has long been with us. I was thinking rather of the reduction of dimensions. Where one firm sells, let us say a cloak of sufficiently ample dimensions at a certain

price, a competitor steps in and offers apparently the same article at a lower price. I say "apparently the same," because measurement will show that the area of superficies is considerably reduced, accounting for the lower selling price. It is said and no doubt with truth, that the reduction in dimensions is a cause of injury to the trade because the article fails to give that satisfaction to the wearer which one of more ample dimensions would do. The point seems one that might with advantage engage the attention of the Rubber Manufacturers' Association, though it seems very doubtful whether remedial measures could be taken.

THE old established fire engine manufacturing business carried on at the Metropolitan Works, Salford, Manchester, by William Rose & Co., has recently undergone an important alteration in its name and management. The business has been taken over by a new company with the title of the William Rose Hose Co., Limited, the capital, privately subscribed, being £50,000. The first directors are William Rose, James E. Baxter, and David Moseley. Such a strong directorate is a good augury for the consolidation and expansion of the business in fire hose so long carried on by the first named director. Whether the energies of the new board will be devoted to furthering effective competition with the two great fire engine firms of Merryweather and Shand is a matter for speculation and one that does not call for comment. The Metropolitan works are fitted with the best machinery for weaving flax hose and of course the new directors are in a position to see to the manufacture of the rubber lined hose which is the quality exclusively used by the Metropolitan (London) Fire Brigade. With regard to this matter of rubber lined hose, a considerable difference of opinion is found among fire brigade authorities, the example set by London being by no means generally followed by provincial municipalities.

A NEW
FIRE HOSE
COMPANY.

A STRANGER paying a first visit to the works of this old-established firm at Tottenham might naturally express surprise at the small acreage they cover. The explanation, of course, is that the new works at Barking being now in full operation, a considerable portion of the old works has been demolished, only certain branches of the business being now carried on at the old address. Messrs. Warnes, although having nothing to grumble at as regards trade generally, are in agreement with the prevailing opinion that the present high price of the raw material is acting adversely on the output. As I write, however, the prospect of a considerable reduction is imminent, and there can be little doubt of a spurt in business resulting. Messrs. Warnes' specialty continues in the elastic thread of which they turn out, I think I may safely say, considerably more than any other house in the world.

WILLIAM WARNE
& CO., LIMITED.

NEWSPAPER warfare is rarely interesting to others than those primarily concerned, and I do not propose to say more than a word or two by way of rejoinder to Dr. Weber's remarks on this subject in the October issue of this Journal. In his usual jealous regard for the language of his adopted country, he comments adversely on my employment of the term "tirade." Here, I am afraid, we must remain at variance; with regard, however, to his general plaint it appears that I was in error as to the trend

"NOMENCLATURE
OF RUBBER."

of his appeal—the invitation to adopt the term “polyprene” being extended to scientists only and not to the general public. Apart from this misinterpretation of his words, which I regret, I really do not see, in looking over my remarks again, that the occasion warranted a reply in such a heated strain. It can hardly have escaped the memory of my readers that I have more than once referred with regret to the prevalent use of such terms as “gummi” and “goma,” and I do not see how any reference I made could be construed into anything antagonistic to the spirit of Dr. Weber’s remarks. It is possible to recognize the existence of defects without transforming one’s self into an agitator for their removal. As a mild rejoinder to the thoughtful exhortation to temper my remarks with wisdom, might I remind my critic of the expression, “what is desirable is not always expedient.”

ON the occasion of the dinner held among the members at the Queen’s Hotel, Manchester, on October 22, Mr. Lockhart, of W. & A. Bates & Co., in the chair, a gratifying sign of the increased unanimity being shown in the trade was the presence of a representative of the Dunlop company. This firm, it will be recalled, was the only one of any magnitude in the trade which withheld its signature to the circular issued last May announcing a rise in prices owing to the increased price of raw materials.

I UNDERSTAND that the recent purchase of the Anchor Cable Co. works at Leigh, Lancashire, by Callender’s Cable Co. was due to a resolve on the part of the latter company to compete in the vulcanized rubber cable business. Hitherto I need hardly say this firm’s cables have been insulated entirely with a special vulcanized bitumen.—At the half yearly sale of condemned Postoffice stores on November 11, the amount of Gutta-percha strippings offered was 45 tons and that of rubber covered cable 4½ tons. The respective prices for samples were 4 shillings and 6 pence. The quantity of Gutta-percha offered corresponds very closely to the average of recent years, the increased use of dry core cable not having, as yet, at any rate reduced the amount of Gutta-percha annually offered for sale by St. Martins.—The fact that the War department have altered their specifications for rubber in accordance with the representations of the India-Rubber Manufacturers’ Association is one that deserves to be recorded in these columns as indicating a new departure. The heat tests are now to be 2 hours dry heat at 280° and 4 hours moist heat at 320°F., being an increase of an hour in each case. Moreover, the “best quality” rubber is to be stipulated for instead of the “best Pará” rubber as heretofore.—Brown substitute made from fish oil is now being made in England, though I have no information as to the extent of its sales. There is plenty of a cheap class of fish oil to be had in the market but its objectionable smell (as evidenced where soft soap is used) has militated in a number of cases against its use.—The Pluviusin Co., of Mouton Green, near Manchester, are finding an increasing sale for their product, which, however, does not seem to have affected certain branches of the rubber trade to anything like the extent prognosticated. It is rather the leather industry that feels the competition. A company making a somewhat similar product called “Toreid” has recently been established at Vitry-sur-Seine, on the outskirts of Paris, with a capital of 1,000,000 francs.

I HAVE been the recipient from an official source of several pamphlets dealing with Peru and its potential wealth, not the least interesting of which to me is entitled “La Industria de las Gomas en el Peru.” According to this booklet the various climatic conditions pre-

vailing render the country the most healthy in America, ideas to the contrary being the outcome of ignorance. It is in the mountainous zone that the important rubber gathering industry flourishes, under the rules and regulations that *concessionaires* have to comply with and which seem to be equitable enough. Naturally enough it is somewhat of a sore point with the authorities that the statistics relative to the export of fine rubber and caucho do not nearly indicate the annual production because of the large amount that finds its way to Manáos by the Amazon and its tributaries, though this plaint is shared with other South American states. It is estimated that the figures of 619,904 kilos of Caucho and 382,503 kilos of fine rubber which paid duty to the government in 1899 represent only a third of the amount which left the country. The plan of working the rubber forests as part of an organized branch of economic botany is advocated and Peru would seem to offer a good field for those proposing to embark in the cultivated rubber business, though I should say that I am not aware how far the prevailing transport conditions can be considered advantageous. The Peruvian trees, it is said, attain in general the height of 20 to 25 meters, the color of the flowing sap being indicative of the quality of the rubber; thus if violet it is first class, if red or white it ranks as second class. It may be that a country which is desirous of attracting immigrants may be inclined to paint its advantages in somewhat too glaring colors, but certainly from what I read of Peru and its varied botanical and mineral wealth it seems a country deserving of the colonists’ attention.

RUBBER EXPORTS FROM PERU.

THE details below, from the *Loreto Commercial*, relate to the shipments of rubber from the Peruvian department of Loreto, having the Amazon river for its outlet. The rubber shipments for the department are classified in the tables as from Iquitos, Caballo-Cocha, and the river Javary. Such rubber as is collected in southern Peru finds an outlet, for the most part, via the Pacific coast, and is not embraced in the present showing. The table relates to the exports for two years:

GRADES.	Iquitos.	Caballo-Cocha.	Javary.	Total.
1901.				
Fine rubber.....kilos.	389,601	88,518	317,098	795,217
Entrefine.....	42,885	1,397	1,792	46,074
Coarse.....	224,436	44,639	32,186	301,261
Caucho slab.....	59,707	9,387	2,246	71,340
Caucho ball.....	509,655	7,667	3,413	520,765
Weak rubber.....	4,019	—	—	4,019
Total.....	1,230,303	151,608	356,755	1,738,676
1902.				
Fine rubber.....kilos.	412,295	87,839	280,189	780,323
Entrefine.....	25,752	3,752	420	29,924
Coarse.....	155,989	38,227	32,981	227,197
Caucho slab.....	73,041	6,074	12,557	91,672
Caucho ball.....	623,976	6,287	10,071	640,334
Weak rubber.....	8,636	—	—	8,636
Total.....	1,299,689	142,179	336,218	1,778,086

SUMMARY OF INCREASE (IN KILOGRAMS).

Increase in Caucho output in 1902.....	139,901	
Increase in “weak rubber”.....	4,617	144,518
Decrease in Rubber (Pará sorts).....		105,108
Net increase in exports in 1902.....		39,410

ONE of the old-school druggists’ sundries men refers to the time when syringe bulbs brought from 24 to 27 cents each and rubber tubing was \$1.75 a pound. It makes one sigh for the old times and the old prices.

INDIA-RUBBER
MANUFACTURERS’
ASSOCIATION.

TRADE
NOTES.

RUBBER
IN PERU.

CRUDE RUBBER INTERESTS.

THE EXHAUSTION OF "CAUCHO".

A REPORT by United States Consul Kenneday, at Pará, dated September 9, refers to "the rapid destruction of the rubber forests in the very region where the best rubber is found," as "really worrying the rubber men," and expected this year to "be beyond all precedent—enormous and irreparable." He refers to advices from an exploring expedition headed by Captain William Gerdeau, an expert of fourteen years' experience, who has spent more than the year past in an investigation of the upper Amazon territory, where he found "the rubber gatherers cutting down the forests with amazing rapidity and improvidence, far beyond what his previous information had led him to expect." Another report quoted by the consul is one by Mr. Robert B. Ewart, who lately crossed the continent from Lima, Peru, coming down the Ucayali river to Iquitos, and thence down the Amazon to Pará. In the great territory drained by the Ucayali he refers to the Cacho hunters as "the bane of the country," who "have done incalculable damage in the past few years" in cutting down the rubber trees. "Every year enormous forests of rubber are destroyed, and each year the supply grows less and less and the rubber gatherers themselves go back further from the rivers."

Consul Kenneday in transmitting this information evidently confounds the Cacho tree with the *Hevea* species, which yield the Pará rubber of commerce. It is no news that the Cacho yield is obtained wholly by the destruction of the trees, whereas this practice has never extended to the extraction of rubber from the *Hevea*. On the other hand, the tendency has been to give better care to the preservation of the Pará rubber trees, which are visited regularly, year after year, in carefully marked *estradas*, permanent groups of trees well cared for being regarded as the most important asset of the country.

Thirteen years ago Major J. Orton Kerbey, then United States consul at Pará, reported:

The Peruvian rubber or Cacho forests are already fast disappearing and the nearest are now far away. The practice of felling the tree to collect the rubber has destroyed all the trees near the rivers, except far up on the Ucayali and Javary rivers. It is affirmed that extensive tracts of forest have not yet been touched, but that they are difficult of access on account of the distance from the rivers and the lack of roads. It is perfectly safe to assert that in the near future all the available Cacho forests of Peru will have disappeared unless other methods are speedily adopted.

This statement has been confirmed by every writer on the conditions of the Cacho industry down to the present time. In October, 1901, THE INDIA RUBBER WORLD contained an extensive report on the exhaustion of the rubber resources of Colombia, the grade of rubber produced there being the same as the Cacho from the upper Amazon, and the same wasteful practices have followed the migration of the Cacho hunters to the headwaters of the Amazon. And yet such was the wealth of the latter region that year after year the output of gum has increased rather than fallen off. But this cannot continue always. In *The Geographical Journal* (London) for October, C. Satchell presents a map of the river Javary (Javary), which forms the boundary between Brazil and Peru, and in writing of the adjacent country he says: "Rubber gathering is practically the sole industry, and this is decaying." The same story may be told of every river along which Cacho is gathered extensively. While the sources of Pará rubber proper are

not being destroyed to the extent which might be inferred from Mr. Consul Kenneday's report, an important grade of rubber is disappearing, leaving the *Hevea* trees to be the sole natural source of rubber.

A CONSUL TO REPORT ON RUBBER.

ON November 14 Colonel Louis N. Aymé, the new United States consul for Pará, sailed from New York, on the *Cearense*, for his official post. It is understood that, acting under instructions from Washington, Consul Aymé will, as soon as practicable after becoming established at Pará, go up the Amazon, with a view to studying and reporting upon business conditions in general, and particularly such details as may be of interest in connection with the extension of American trade. As the trade of his district (which embraces Manáos) is so largely based upon rubber, whatever the consul may write regarding his investigations will be practically a report on rubber.

A RUBBER SCHOOL IN FRENCH AFRICA.

AN industrial school established in Bobo-Dioulasso, the French Soudan, in 1902, with funds supplied by the colony, has for its object the instruction of natives in the best methods of extracting and coagulating rubber, with a view to the preservation of the trees. In a report of June 28, 1903, mentioned in *La Quinzaine*, the government delegate in the colony states that the school has been attended since the beginning by more than 150 pupils, who have been arranged in groups and taken into the best rubber districts in various parts of the colony. The official report is to the effect that good results have been obtained, and that the merchants are pleased with the effect upon the native in the avoidance of the destruction of the rubber yielding plants, and also in the preparation of rubber of a better quality than in the past. As early as February, 1902, the lieutenant governor of French Guinea issued a decree forbidding the exportation of adulterated rubber, which has had such good results in improving the quality of rubber sent from that region that similar regulations are to be enforced throughout French Africa.

THE SALE OF CONGO RUBBER.

THE lines which follow appeared in some of the American newspapers early in the past month:

AMSTERDAM, Nov. 5.—Among the reforms which will shortly be introduced in regard to trading with the Congo Free State will be one in regard to a change in the custom of selling ivory and rubber. Under the present arrangement agents collect the stock at Boma, where it is sold. Thence it is forwarded to Antwerp. In the future it will be collected at some place on the lower Congo where it will be sold at public auction. This change will be a serious blow at the commerce of Antwerp, but it is thought that it will benefit the Congo Free State.

When this publication was brought to the attention of Mr. Albert T. Morse, of A. T. Morse & Co. (New York), crude rubber merchants and important handlers of Congo rubbers, that gentleman was very positive in expressing his doubts that any such change was contemplated.

"I can see no good reason," said Mr. Morse, "why any such change should be made, and every reason why it should not be made. At Antwerp the rubber buyers of Europe can collect, and rubber merchants of other countries can receive samples from there in ten days. There would be no dealers go to Boma and it would take forty days to get samples delivered. I can see no advantage in such a change to the Congo Free State, for it would bring very few people there and I am confident the

producers of rubber would get less money for their product. One of the advantages claimed is the saving of freight on account of the loss of weight after the rubber is cut. I don't believe this shrinkage would amount to 2 per cent., which is too little to be considered. The present method of buying rubber at Antwerp is abominable, but I believe it would be worse at Boma. When I say abominable, I mean to the buyer. Under the present system every buyer, after getting samples, bids as much as he possibly can. He may not bid high enough to get what he wants, so the following month he goes higher, and so it is that the prices are continually being forced up. If it were an auction where a man had more bids than one he could start low and go up; under the present system every buyer has to start at his top limit."

In the recent Note of the Congo Free State government, in reply to the British government's Note to the Powers in relation to alleged abuses permitted on the Congo, this statement appears, and it may have been the basis of the report that the sale of rubber is to be transferred from Antwerp to Boma:

The policy of the state has not, as has been stated, killed trade. On the contrary it has created it, and it ensures the perpetuation of the materials of trade. It is thanks to it that on the commercial market of Antwerp and very soon in the Congo itself—the possibility of establishing there sale depots is being examined—there can be offered annually to everybody without distinction, without favor or monopoly, 5000 tons of rubber collected in the Congo, while formerly, for instance in 1887, the export of rubber hardly reached 30 tons.

RUBBER PLANTING ENTERPRISES.

IN a paper on "Rubbers and Fibers" read by J. Cameron, F.L.S., before the United Planters' Association of the state of Mysore (southern India) at their recent conference at Bangalore, referred to the experiments in planting in that region three American species of rubber—the rubbers of Pará and Ceará, and *Castilloa elastica*. He was disposed to give the preference to the Ceará rubber (*Manihot Glaziovii*), which, in the last decade, had thriven amazingly, and had certainly come to stay in the country. It will flourish in dry situations, from the sea level up to at least 4000 feet. Trees ranging in age from 8 to 14 years had been found to contain a liberal amount of latex, which flows freely. One tree, tapped twice a week for three months, had yielded a little over 3 pounds of rubber. Mr. Cameron thinks the *Hevea Brasiliensis* not likely to be of much practical use in the drier parts of India, though succeeding in Ceylon and the Malay peninsula. At Bangalore the tree languishes and dies during the long dry season, and irrigation does not give relief. The *Castilloa elastica* he regards as intermediate between the other two species and likely to do well in the moister regions of the coffee zone.

THE SEREMBAN ESTATE RUBBER CO., LIMITED.

THIS company has been formed to take over the Seremban estate, in Negri Sembilan, one of the Federated Malay States. The authorized capital is 1,000,000 rupees [= \$324,433.33], divided into 10,000 shares. The estate, to be taken over as from January 1, 1904, comprises 3492 acres, held under a 999 year lease from the government. There are 412 acres originally planted to Liberian coffee, which in 1898 were planted throughout with Pará rubber 20 x 20 feet, and three years ago an intermediate planting of rubber was made. The coffee is estimated to yield 500 piculs [= 66,600 pounds] in 1904, but very little thereafter. There are about 40,000 rubber trees 5½ years old,

A MUCH TRAVELLED CANARD.

THE Belgian journal *Industrie et Commerce du Caoutchouc* quotes the journal *L'Amérique Latine* a report credited to the *Venezuelan Herald*, regarding a newly discovered rubber producing plant in the United States, of which great things are expected, especially due to "des experiences faites clandestinement par la Goodrich Rubber Company." This report so far has gone only half way around the world; by the time our contemporaries in Hanoi and Allahabad have discussed the "chico" plant, no doubt its merit will have become exaggerated to the extent of making it superior to Pará rubber. And the "Goodrich Rubber Company" will be heard of having developed the greatest discovery of the age in respect to rubber. Evidently the company referred to have conducted their experiments so "clandestinely" that their right hand does not know what their left is doing. At any rate, in September last we published a report on the subject, stating: "Mr. B. G. Work, vice president of that company, informs THE INDIA RUBBER WORLD that he never heard of the matter until he saw it in the newspapers. In other words, 'the story was made out of whole cloth.' One of our correspondents intimates that the writer who first gave publicity to the story was the victim of a jocular young rubber man in Denver."—Nevertheless there is something doing in Colorado which indicates a belief on the part of local capitalists in the future of that State as a producer of rubber, as our news columns show.

10,000 trees 3½ years old, and 30,000 trees 2½ years old, and about 20,000 on a new clearing. The selling price of the estate is 450,000 rupees [= \$145,995], including 360,600 rupees [= \$116,990.66], for the coffee and rubber land, which is estimated at 700 rupees [= \$227] per acre. The vendors accept in half payment 2250 shares, the remainder of the purchase price to be paid in cash. The first issue of shares (in addition to 2250 mentioned) is 4750 shares. It is proposed to make new clearings as rapidly as possible, say 200 acres in 1904, and for this purpose arrangements have been made to borrow money as needed, up to £5000 [= \$24,332.50], at 5 per cent. While no attempt is made to estimate future profits, the company's prospectus sets forth reasons for the belief that they will afford a good return for the investment. The owners of the property are E. S. Grigson, W. Saunders, W. H. Figg, L. Davidson, D. R. Marshall, V. R. Wickwar, and the heirs of D. Cameron and E. D. Harrison. The first directors of the company are Messrs. Grigson, Saunders, and Figg.

GOLCONDA ESTATE RUBBER CO., LIMITED.

THIS company (registered at Colombo, October 16) has been formed to purchase the Golconda estate, in the district of Klang, Selangor (Federated Malay States), comprising 970 acres, for 90,000 rupees [= \$29,199], as from January 1, 1903, to be paid for in cash, or shares, or both, as may be arranged. The capital is 300,000 rupees [= \$97,330], in 3000 shares.

THE SOUTHERN CEYLON TEA AND RUBBER CO., LIMITED.

ORGANIZED to purchase the property of the Udugama Tea and Timber Co. (in liquidation) and plant the estate in rubber. The authorized capital is 1,000,000 rupees [= \$304,156.25], in 10,000 shares, of which 4500 shares are offered for subscription in Ceylon and in Australia. The company are paying 270,000 rupees [= \$85,163.75] for 7398 acres, of which 480 are planted

in tea, with buildings and other improvements. The tea has been neglected, but it is expected that a profit from it can be realized up to 1910, when a profit can be derived from rubber (*Hevea*). A small amount of rubber already planted has grown well, and a new planting of 1500 acres is planned, the clearing to be begun about December 1. Directors: Hon. J. N. Campbell, Hon. W. H. Figg, and L. T. Bonstead (the vendor of the Udugama property). Whittall & Co., Colombo, are the agents and secretaries.

THE CEYLON RUBBER CO., LIMITED.

THIS company was registered at Colombo September 18, 1903, to acquire or create plantations of rubber. The authorized capital is 750,000 rupees [= \$243,325], in 7500 shares. The first directors are F. L. Clements, Keith Rollo, and E. L. Grigson, the latter of George Steuart & Co., Colombo. The company have purchased 240 acres from the government in the Avisawella district. An issue of 1000 shares of stock is announced.

SAN PEDRO RUBBER PLANTATION CO.

[Amuy-pa plantation, department of Palenque, state of Chiapas, Mexico. Office: Ublein building, Milwaukee, Wisconsin. See THE INDIA RUBBER WORLD, February 1, 1901—page 154.]

THE committee of inspection of this plantation for the second year consisted of H. J. Smith and H. W. Hill, whose report is printed in 32 page pamphlet, more than half the space being devoted to photographic views, as being likely to give a better idea of the condition of work in progress than any amount of written description. The second year's work is stated to have embraced the clearing of 500 additional acres and the planting of 1,000,000 rubber (*Castilloa elastica*) seeds. This is the company headed by George W. Peck, former governor of Wisconsin.

SOLO-SUCHIL PLANTATION CO.

[Plantation at Solo-Suchil, canton of Manatitlan, state of Vera Cruz, Mexico. Office: 835 The Spitzer, Toledo, Ohio.]

INCORPORATED November 3, 1902, under New York laws; capital, \$350,000. The company is a consolidation of three plantation companies: (1) The Ohio Coffee Growing and Trading Co., of Toledo, Ohio, organized six or seven years ago; (2) The Tres Rios Co., of Independence, Iowa; and (3) The Solo-Suchil Co., of Kansas City, Missouri. Their properties being adjacent, important economies in management are expected to result from consolidation. The location is in the "Dos Rios" region, fronting on the Solo-Suchil river, which is navigable to the port of Caatzacoalcos, on the gulf. A statement issued by the company gives the following details:

PLANTATIONS.	Area Acres.	Acres Imp'vd.	Planted Rubber.	Planted Coffee.	Coffee Bearing.
Toledo.....	900	550	90	460	460
Tres Rios.....	1040	475	275	200	50
Solo-Suchil.....	575	100	75	100	100
Total.	2515	1125	440	760	610

The total number of rubber trees planted to date is 264,000, which number will be reduced by thinning. The number of coffee trees is 408,120, of which a large proportion have come into bearing, so that the company already has an income from its plantation. Additional planting is planned, with a view to having a permanent stand of 300,000 rubber and 500,000 coffee trees. The company offer a certain amount of treasury securities to provide means for the new planting. The officers are: Henry Neel, president; Clark L. Cole, vice president; Henry F. Bleimeister, secretary and treasurer. The plantation manager is R. O. Price, who has had ten years of experience in planting on the isthmus of Tehuantepec. The names of two of the other directors—Harry W. Bennett and Squire Garnsey—are widely known in connection with Mexican rubber planting.

THE SOUTHERN RUBBER PLANTATION CO., LIMITED.

[Offices: Tulane-Newcombe building, New Orleans, Louisiana.]

INCORPORATED in July, 1903, under Louisiana laws, with \$1,000,000 capital authorized, to establish a plantation of tropical products, including India-rubber, at Monte Christo, state of Chiapas, Mexico. Albert Mackie is president, A. R. Blakely vice president, P. H. Schniedau treasurer, and Harry C. Wildesen secretary. John Elsee and John C. Roberson are also directors, the former being plantation manager and the latter general manager, with offices in New Orleans. Mr. Roberson was the organizer of the company and was formerly assistant general manager of the Mexican Rubber Culture Co., of Portland, Oregon. At last accounts Messrs. Wildesen and Elsee had been in Mexico inspecting lands on which the new company hold an option.

RUBBER PLANTING COMPANY PUBLICATIONS.

SOLO-SUCHIL Plantation Co., Toledo, Ohio—(a) Coffee Growing and Rubber Cultivation. 32 pages and map. (b) First quarterly report of plantation manager, June 5, 1903. 4 pages.

San Pedro Rubber Plantation Co., Milwaukee, Wisconsin.—Report to the Contract Holders of the Amuy-pa Plantation, by Their Committee. 32 pages.

THE LITTLE KNOWN AMAZON REGION.

TO THE EDITOR OF THE INDIA RUBBER WORLD: As new companies continue to be reported for working rubber estates in South America, a few warnings supplementary to those given by Mr. Ashmore Russan in your journal of October 1, 1902, may not be inappropriate.

Most of the companies organized to do business here seem to have the vaguest ideas of Amazonian geography. Thus the Amazonas Rubber Estates, Limited, an English company, had one office at Manáos and the other, the manager's office, at Tefé, regardless of the fact that for business purposes Tefé was as far from the *seringal* as Manáos. There have been companies projected with headquarters hundreds of miles from their rubber fields, and without navigable streams between. As for the fields in question, they might be worked to advantage, but not with the manager located at points so remote.

When a Brazilian works a *seringal* he goes and lives there and manages it on the spot, which is the only way in which the business can be made to pay. Inexperienced managers are the cause of most of the trouble, and lack of care in choosing the site the cause of the rest, with the companies which come to grief out here. Like all other business, the management of rubber gathering requires experience and a wide knowledge of human nature, and in this case not a little of tropical biology. But the large companies which have been organized distrust the Brazilians, and those Europeans who have acquired the necessary knowledge and experience distrust the companies, and will not sell what they know for a mess of pottage. And so the companies go from bad to worse and finally wind up. When they get a good man they generally sack him or snub him, and good men don't like either process.

Experience in other parts of South America—in Rio, Buenos Ayres, or Pernambuco, for instance—is of no use on the Amazon, which is like no other part of the world. The only experience of use here is experience of the Amazon, its ways, its diseases, its peoples, its moods and fancies. Some day a Kipling will arise and sing the Amazon, and then people on the outside will begin to understand something of its charms and its relentless obedience to its own laws, and then perhaps companies will live and not die here.

L. G.

Manáos, October 28, 1903.

A JAPANESE RUBBER FACTORY DAMAGED.

THE factory of the Fujikura Insulated Wire and Rubber Co., at Tokio, Japan, was demolished by a severe hurricane on the forenoon of September 23. The wind arose suddenly and unexpectedly during a thunderstorm, wrecking all the buildings and carrying some of the roofing and doors for a distance of more than a half mile. Three workshops were blown down, besides the rubber department, the office, shipping department, engine and boiler room, and workmen's boarding house. Though 60 men were employed at the time, in different departments, only a few were injured, and these only slightly. The effect of the storm was confined to a narrow area, including only about twenty of the neighboring buildings. The loss to the company was about 20,000 yen [= \$10,000]. Temporary workshops were speedily erected, making use of available water



RUIN OF A PORTION OF THE FACTORY.

power, and by the end of the year the company hope to have completed the rebuilding of their works. The illustration which appears on this page is made from one of a series of photographs of the ruins, sent to THE INDIA RUBBER WORLD by Mr. Kenzo Okada, a member of the company, and a nephew of its founder, the late Mr. Zempachi Fujikura. Mr. Okada will be remembered by not a few rubber men in the United States, where he worked for several years in acquiring a knowledge of the rubber industry. The works referred to above date from the first attempts made by Mr. Fujikura, in 1884, to insulate electrical wires with rubber. The business has grown gradually and now includes, in addition to insulated wire work, a waterproofing plant and the manufacture of various small articles of rubber.

A CABLE EXPERT ON WIRELESS SYSTEMS.

IN an address to the shareholders of the Commercial Cable Co., at their recent annual meeting in New York, the general manager, Mr. George G. Ward said, in relation to wireless telegraphy:

"At the last annual meeting some remarks were made by me in regard to wireless telegraphy and its effect upon submarine cables—we see no reason to change the opinion expressed at that time. Admitting the recent transmission of a message across the Atlantic without wires, radical improvements would have to be made in its developments before wireless could possibly hope to meet the demands of trade and commerce and engage in successful competition with subma-

rine cables. A good deal has been said and advertised about the many wireless systems for the past two or three years. As yet there is nothing to show that messages can be transmitted without wires, even between short distances, with anything of the regularity, reliability, correctness, and secrecy at any and all times of the day and night, demanded of the existing telegraph systems and necessary for the protection of the customers' interests and the development of the telegraph business. Furthermore, the transmission of messages between the European and American coasts of the Atlantic is far from constituting a transatlantic telegraph service as it exists to-day. The essential adjunct of an extensive inland system for the distribution and collection of messages on the North American continent must not be lost sight of.

"A large part of the traffic passing by the Atlantic cables is destined for places remote from the seaboard. Messages to and from Chicago, St. Louis, San Francisco, Montreal, Toronto, etc., require and receive transmissions which are measured by minutes. This important traffic would be practically extinguished if senders could not rely on extremely rapid and accurate service.

"Nothing has occurred since I last addressed you to cause us to modify the conservative estimate then expressed and which I confidently repeat, that telegraphy by means of wires has little to fear from the competition of telegraphy without wires. For the benefit of those who do not share my confidence I may say that the etheric waves will be as obedient to us as to anybody if it should ever be found practicable to dispense with cables and wires. I wish to say we have every admiration for the eminent scientists connected with the discovery of wireless telegraphy, at the same time we are satisfied it has its limits."

GROWTH OF A GERMAN RUBBER FACTORY.

THE twenty-fifth anniversary of Philipp Penin Gummi-waaren-Fabrik, Actiengesellschaft (Leipzig, Germany), has been commemorated in a handsome souvenir brochure, giving the details of the growth of the business. Herr Penin began the manufacture of rubber tubing and other like articles, in a very small way, in the village of Plagwitz, before its inclusion in the city of Leipzig. A shanty with two windows served as his first factory. Being successful, he was not long in moving to a larger building, where he employed a 2 HP. gas engine. In 1884 he occupied a factory of much larger proportions, substituting steam power for the



ORIGINAL PENIN FACTORY.

gas motor. In 1887 he took on the manufacture of hard rubber and red rubber goods, and opened a branch factory at Markranstädt (near Leipzig) and a store in Berlin. In 1888 he began making cut sheet, which before had been imported from England, and again enlarged his factory. In 1893 he bought more land and established an ice plant and cooling facilities required in the manufacture of sheet rubber. By that time 250 hands were employed. On June 29, 1894, a joint stock company was formed, Herr Penin retaining the management until his death, October 4, 1896. The factory was again enlarged in 1893, more boilers and engines being installed, and also an electric lighting plant. The branch factory at Markranstädt has also been enlarged several times. There are now employed 700 work people, seven steam engines with 400 HP., and three dynamos for supplying light and also power for the smaller machinery.

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED OCTOBER 6, 1903.

NO. 740,403. Ball [comprising an inner shell of elastic material containing compressed gas; a pressure resisting layer of windings of flexible material; a layer of elastic material having embedded therein substances adapted to give weight to the ball; and an outer layer of elastic material]. H. D. Day, Providence, Rhode Island.

740,443. Exercising machine. J. C. Korth, Harrison, New York.

740,578. Pneumatic tire [double tube]. P. Magnus, Cullingwood, Victoria.

740,618. Fountain pen. John Blair, New York city.

740,664. Hose coupling. C. W. F. Kroll, Jersey City, New Jersey.

740,665. Horseshoe pad [to be interposed between the hoof and the shoe]. A. Larsen, Chicago.

740,760. Rubber heel holder [metal plate for attachment to the shoe, having flanges to retain the heel]. P. A. Jahn, Cleveland, Ohio.

740,877. Clincher tire for vehicle wheels. Albert de Laski and P. B. Thropp, Trenton, New Jersey.

Trade Mark.

41,210. Rubber boots and shoes. Hood Rubber Co., Boston. *Essential feature*—Either the picture of a bulldog or the word "Bulldog" or both. Used since February 1, 1903.

ISSUED OCTOBER 13, 1903.

741,056. Piston packing. Marshall Montgomery, Philadelphia

741,110. Horseshoe [with detachable heel calks each consisting of a metal skeleton and a rubber body]. F. N. Cline, Chicago.

741,173. Sanitary urinal. J. Seidel, Milwaukee, Wisconsin.

741,193. Wheel for vehicles [combining a felly, a tire support mounted thereon and provided with two or more tire supporting grooves, and a corresponding number of solid tires]. A. Turkington, Lafayette, Indiana.

741,256. Art of extracting gum [meaning rubber or rubber like gum; the process consists in treating the plants with a solvent for the gum and then treating the solution with an alkali whereby the gum is separated]. W. A. Lawrence, New York city, assignor to the Continental Rubber Co., a corporation of New Jersey.

741,257. Apparatus for extracting gum. *Same.*

741,258. Art of extracting rubber without solvents. *Same.*

741,259. Composition of matter [an alkaline solution containing resin derived from a plant of the genus *Parthenium* and the solvent for both the gum and resin of the new plant]. *Same.*

741,260. Process of refining crude rubber. *Same.*

741,360. Toy. W. M. Moseley, Elgin, Illinois.

741,401. Vehicle wheel rim [adapted to pneumatic tires]. H. Harris, assignor of one half to W. J. Gorham, both of San Francisco.

741,437. Bag fastener [combination of a paper bag and a rubber band permanently attached thereto]. C. W. Bader, assignor of one half to Henry Kann, both of Chicago.

741,521. Body support. W. U. G. Martin, Indianapolis, Indiana.

ISSUED OCTOBER 20, 1903.

741,714. Armor for pneumatic tires. E. C. Radick, Menasha, Wisconsin.

741,788. Rubber tire joint closing machine. F. H. Guber, assignor to J. S. Manter, both of Kansas City, Missouri.

741,890. Dental dam. H. Craigie, assignor of one half to J. W. Roach, both of San Francisco.

741,966. Exercising device. C. Hershens, New York city.

742,004. Golf club [the handle provided with a loop of elastic material]. W. C. Carnegie, Cumberland Islands, Georgia.

742,013. Flexible ruler. E. A. A. Dunn, Ballarat, Victoria.

Trade Marks.

41,322. Rubber belting. Gibbens & Stream, New Orleans. *Essential feature*—The representation of a mosquito associated with the word "Mosquito." Used since July 25, 1902.

41,344. Solid and pneumatic tires. The Goodyear Tire and Rubber Co., Akron, Ohio. *Essential feature*—The word "Reliance." Used since September 1, 1903.

ISSUED OCTOBER 27, 1903.

742,362. Elastic horseshoe. E. J. Sinnott, Erie, Pennsylvania.

742,440. Swimming mitt. H. W. Johnson, Lima, Ohio.

742,486. Motor wheel [together with pneumatic tire]. Louis Peter, Frankfort o/Main, Germany.

742,634. Medicament injector. T. E. Hall, Chicago.

742,635. Medicament injector. *Same.*

742,655. Hose coupling. J. Homola, Allegheny, Pennsylvania.

742,656. Hose cut-off compressor. E. Horsey, Kingston, Canada.

742,769. Fountain pen. P. Wheatley, Syracuse, New York.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

THE BRITISH PATENT RECORD.

[* Denotes Applications from the United States.]

APPLICATIONS—1903.

19,930. G. T. Shilton and A. Schultze, Glasgow. Pneumatic tire cover. Sept. 16.

19,949. W. Philipson, T. W. H. Philipson, and P. C. Philipson, London. Pneumatic tire. Sept. 16.

19,969. J. P. E. Henery, London. Golf ball. Sept. 16.

19,990. G. Green and J. Miller, London. Solid tire for heavy vehicles. Sept. 16.

20,013. E. B. Killen, Bangor, Ireland. Pneumatic tire. Sept. 17.

20,036. J. Voet, London. Elastic tire for vehicles. Sept. 17.

20,174. D. Woodhouse, Flixton, Lancashire. Rubber boot and shoe preserver. Sept. 19.

20,264. J. D. Gamble, Sunderland. Rubber stamp. Sept. 21.

20,281. S. C. Godfrey, Surbiton. Pneumatic tire shield. Sept. 21.

20,356. W. H. Freeman, London. Union or connection for rubber hose. Sept. 22.

20,359. C. C. Hanner, Manchester. Tire for cycles and vehicles. Sept. 22.

20,369. C. Glass, Magdeburg, Germany. Air cushion. Sept. 22.

*20,395. P. D. Thropp and Albert de Laski, London. Tire for vehicle wheels. Sept. 22.

20,444. R. Bell, Glasgow. Tire for motors. Sept. 23.

20,449. G. Lees, Manchester. Tire and tire cover for motors. Sept. 23.

20,464. W. Heatley, London. Pneumatic tire cover. Sept. 23.

20,489. L. Johnstone, London. Pneumatic or cushion tire. Sept. 23.

20,668. C. Durand, London. Pneumatic tire. Sept. 25.

20,857. J. Roberts and J. Stuart, Liverpool. Device for repairing tire punctures. Sept. 28.

20,880. E. B. Killen, Bangor, Ireland. Pneumatic tire. Sept. 29.

20,988. D. Rowe, London. Non-puncturable tire. Sept. 29.

20,983. J. A. Jackson, Birmingham. Mount for rubber stamps. Sept. 30.

21,006. L. I. Perry, London. Pneumatic tire. Sept. 30.

21,038. R. J. Barbour, London. Rubber tapered heel and sole plug. Sept. 30.

21,165. A. W. Williams, London. Revolving rubber heels. Oct. 2.

21,176. F. Pudney, London. Tool for cleaning and roughing the surface of cycle tires. Oct. 2.

21,242. G. W. Dawes, Manchester. Heel pads for boots. Oct. 3.

21,266. H. W. C. B. Cave, London. Pneumatic tire. Oct. 3.

21,270. H. Madden, London. Pneumatic tire cover. Oct. 3.

21,301. L. Johnstone, London. Pneumatic or cushion tire. Oct. 3.

21,334. J. Donovan, West Hartlepool. Tire for motors. Oct. 5.

21,375. H. D. Bailey, London. Pneumatic tire. Oct. 5.

21,445. A. Williams, London. Non-side slipping and skidding brake for rubber tired vehicles. Oct. 6.

21,455. G. A. Dell, London. Golf ball. Oct. 6.

21,606. T. Gare, Manchester. Rubber tired wheel. Oct. 8.

21,613. C. H. Wilkinson, Huddersfield. Revolving heel tread. Oct. 8.

21,625. W. C. Sturman, Fallowfield. Revolving heel pad. Oct. 8.

21,651. W. E. Vincent, London. Pneumatic tire. Oct. 8.

21,683. G. V. De Luca, London. Golf ball. Oct. 8.

21,689. W. S. Simpson, London. Pneumatic tired wheel. Oct. 8.

21,690. H. W. Dover, London. Pneumatic tire. Oct. 8.

21,749. A. B. Brown, Edinburgh. Pneumatic tire cover. Oct. 9.

21,773. Christian H. Gray and T. Sloper, London. Pneumatic tire valve. Oct. 9.

- 21,822. W. Stephenson, Liverpool. Improved canvas for tires. Oct. 9.
 21,867. F. B. Wilton and R. W. Cox, Birmingham. Pneumatic tire. Oct. 13.
 *21,890. William Appleton Lawrence, London. Improvements in apparatus for an art of extracting rubber gum, etc. Oct. 12.
 22,019. T. P. Spencer, London. Metal plate in connection with revolving rubber heel pad. Oct. 13.
 22,033. R. Haverland, London. Pneumatic tire for vehicles. Oct. 13.
 22,141. F. I. Gibbs, Birmingham. Resilient tire for motors. Oct. 14.
 22,197. C. M. Jordon, London. Armor plate protection for motor tires. Oct. 14.
 22,217. F. R. Jack, Cullercoats, Northumberland. Pneumatic life saving belt. Oct. 15.
 22,232. Mary Courtney, Southampton. Gloves for surgical use. Oct. 15.
 22,400. A. Pullbrook, and E. H. Pullbrook, London. Air cushion. Oct. 16.
 22,406. A. L. Jones, Radstock, Somerset. Non-collapsible pneumatic cycle and motor tire. Oct. 17.
 22,407. C. E. Jenkins, Cardiff. Rubber strip molded on both sides to form a cover for pneumatic wheels. Oct. 17.
 22,607. E. W. Wooders, Manchester. Heel pads for boots. Oct. 20.
 14,562 (1902). Spraying device for plants [for use with insecticides, disinfectants, and the like] W. I. Scholes, Eccles.
 14,545 (1902). Elastic tire for vehicles [involving the combination of detachable springs and a rubber facing]. J. W. Mooring, Dunstable.
 *14,569 (1902). Finger pad for turning book leaves. L. F. Marsh, Weston-super-Mare (J. G. Marsh, Manchester, New Hampshire).
 *14,609 (1902). Life saving armlets. I. W. Maccolini, Inwood, New York.
 *14,610 (1902). Cow milker. D. T. Sharples, West Chester, Pennsylvania.

[ABSTRACTED IN THE OFFICIAL JOURNAL, OCTOBER 21, 1903.]

- *14,695 (1902). Pneumatic tired wheel. A. Honrath, New York city.
 14,756 (1902). Shower bath. J. Kleinberg and B. Fraenkel, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, OCTOBER 28, 1903.]

- *14,975 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 14,976 (1902). Golf ball [“with India-rubber cores, which are rolled immediately the rubber is taken from the India-rubber tree, the cores being subsequently rolled with or without twine and covered with Gutta percha”]. W. Nevett, Queen's Gate, South Wales.
 *15,156 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *15,157 (1902). Golf ball. *Same*.
 *15,158 (1902). Golf ball. *Same*.
 *15,159 (1902). Golf ball. F. H. Richards, Hartford, Connecticut.

THE GERMAN PATENT RECORD.

PATENTS GRANTED.

- 146,857 (Class 39*b*). Process for manufacture of a substitute for Gutta-percha. M. Franklin, Hamburg. Oct. 7.
 146,989 (Cl. 63*e*). Method of attaching rubber tires to wagon wheels. Walter Ira Gregory, Springfield, Massachusetts, United States. Oct. 7.
 147,152 (Cl. 63*c*). Insert for rubber tires. P. W. Tillinghast, Edgewood, and A. T. Vigneron, Providence, Rhode Island, United States. Oct. 14.
 147,412 (Cl. 71*a*). Shoe with elastic tread. H. Dick, Mülhausen, Alsace. Oct. 21.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 207,892 (Class 15*d*). Combined rubber and cotton cloth envelope for press cylinder on book presses. Marie Itrich, Charlottenberg. Sept. 30.
 208,013 (Cl. 63*e*). Rubber tire with wedge shaped running edge and side bays. M. Polack, Waltershausen. Sept. 30.
 208,607 (Cl. 30*d*). Sanitary napkin supporter. Frau Rudolphine Kirchner, Berlin. Oct. 7.
 208,485 (Cl. 70*a*). Elastic slate pencil or stylus holder. A. Cogoli, Trient. Oct. 7.
 208,839 (Cl. 30*g*). Rubber corks in connection with celluloid plate having camels hair brush or glass rod attached. Fabrik-Pharmaceut-Bedarfsartikel. E. Rothholz & Co., Berlin. Oct. 7.
 208,542 (Cl. 47*f*). Rubber hose with woven interlining and invisible metallic protection. Rheinische Gummi- und Celluloid Fabrik, Neckarau-Mannheim. Oct. 7.
 208,861 (Cl. 47*f*). Hose with woven walls and lined with metal bands woven like cotton strands in which the ends of the bands are retained by rings. Continental Caoutchouc- und Guttapercha-Compagnie, Hannover. Oct. 7.
 208,991 (Cl. 3*b*). Trousers supporters, of rubber bands and cords running through eyes and over rollers. D. Grote, Nachfolger, Unter-Barmen. Oct. 14.
 208,933 (Cl. 30*e*). Rubber air pillows with knitted cover or lining. C. R. Schwalenberg, Mannheim. Oct. 14.
 208,996 (Cl. 47*d*). Driving belts of rubber of any desired cross-section with or without steel band, for motor cars. Frau B. Polack, Waltershausen. Oct. 14.
 208,887 (Cl. 3*b*). Elastic girdle for the limbs underlaid with elastic rubber bands. Frau P. Halbich, Berlin. Oct. 21.
 209,733 (Cl. 30*d*). Vaginal syringe. E. Dufft, Cassel. Oct. 21.

APPLICATIONS.

- 5,064 (Class 28*b*). Rubber cover, with or without insert, for work table in leather dressing machines. Vaugn Machine Co. G. m. b. H., Frankfurt a/Main. Sept. 30.
 34,540 (Cl. 30*b*). Caoutchouc plates for teeth. Rosa Bauer, Cologne. Oct. 7.
 12,865 (Cl. 54*d*). Attachment for machine for folding ice-bags of rubber, paper or other material. Gummiwaaren- u. Bartbinden-Fabrik, O. Dilner, Leipzig. Oct. 21.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, SEPTEMBER 23, 1903.]

- 12,199 (1902). Hernia truss. E. O'Connor, Westport, New Zealand.
 12,234 (1902). Horseshoe pad. M. A. Birkmyre, Whitewell, near Belfast.
 12,304 (1902). Pneumatic tire. G. W. Pitt and S. Ingham, London.
 *12,462 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *12,468 (1902). Golf ball. *Same*.
 *12,473 (1902). Sponge substitute. H. H. Lake, London. (Alexander Straus, New York.)
 *12,475 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 *12,477 (1902). Golf ball. *Same*.
 *12,479 (1902). Golf ball. *Same*.
 *12,480 (1902). Golf ball. *Same*.
 12,484 (1902). Heel pad. P. E. Roberts, Preston.
 12,486 (1902). Pneumatic tire [with inner tube having closed ends]. T. Reid, Northfield, Worcestershire.
 12,491 (1902). Hoof pad. J. Singleton, Manchester.
 12,524 (1902). Elastic tire [of helical springs in a rubber cover]. A. Walters, London.
 *12,580 (1902). Hose coupling [especially for steam hose pipes on railways]. E. E. Gold, New York.
 *12,675 (1902). Single tube vehicle tire. J. W. Blodgett, Chicago, Illinois.

[ABSTRACTED IN THE OFFICIAL JOURNAL, SEPTEMBER 30, 1903.]

- *12,876 (1902). Cleaning apparatus [for carpets and the like, by means of compressed air, through rubber hose]. J. S. Thurman, St. Louis, Missouri.
 *12,968 (1902). Conveyer [including rubber belts for carrying materials]. J. J. Ridgway, Rose Bank, Staten Island, New York.
 13,133 (1902). Reservoir pen. G. W. Perks and F. C. Thacker, Birmingham.
 13,163 (1902). Pneumatic tire [protected by a flat sectioned band of whalebone in the tread]. G. H. Hastings, Oporto, Portugal.
 13,280 (1902). Pneumatic tire [with outer cover formed free from canvas either by forcing rubber through a die or by shaping on a mandrel and afterwards vulcanizing in a mold]. G. E. Heyl-Dia, Manchester.

[ABSTRACTED IN THE OFFICIAL JOURNAL, OCTOBER 7, 1903.]

- 13,378 (1902). Heel protector. J. J. Eckert, Strood, Kent.
 13,423 (1902). Pneumatic tire [prevented from slipping by a series of metal blocks]. C. H. Burt, London.
 13,477 (1902). Heel protector. J. Thomas, Bath.
 13,805 (1902). Solid rubber vehicle tire. J. Goldworthy, Manchester.

[ABSTRACTED IN THE OFFICIAL JOURNAL, OCTOBER 14, 1903.]

- 14,092 (1902). Surgical truss. A. Schumacher, Strasburg, Germany.
 14,104 (1902). Rubber heels and soles. J. Fenwick, Accrington, and R. Ingram, Hurcoat.
 14,253 (1902). Pneumatic tire [with protective band of steel]. J. M. Welch, Glasgow.
 14,381 (1902). Massage appliance. T. Schillberg, Glasgow.

THE LATE LOUIS K. McCLYMONDS.

LOUIS K. McCLYMONDS died on the evening of November 7, 1903, at his residence in South Orange, New Jersey, from the effects of a stroke of apoplexy which he had sustained just one week previous. Mr. McClymonds was born June 12, 1850, at New Lisbon, Ohio, where his father, John McClymonds, a native of Pennsylvania, had settled about 1842, and engaged in the banking business. About 1860 Mr. McClymonds removed with his family to Massillon, Ohio, and assisted in organizing there the Union National Bank. In 1869 he removed to Cleveland, where, with Robert Hanna, he organized the Ohio National Bank—afterward the State National Bank—Mr. Hanna serving as president and Mr. McClymonds as cashier. Upon Mr. Hanna's death Mr. McClymonds succeeded to the presidency and held the office until his retirement from active business in 1887.

Louis McClymonds acquired his education at Massillon during the residence there of his family, being graduated from the high school in 1868. He began his business career in 1871 as bookkeeper and correspondent in the Cleveland bank with which his father was connected. Among the many business enterprises with which the elder McClymonds was connected at various times was the Cleveland Rubber Co., a manufacturing concern, which he assisted in organizing in the early 70's, and in which he retained an interest until his death. The business had not become extensive, however, and had not proved very successful when, in 1873, Louis McClymonds purchased an interest in it. He knew practically nothing about the rubber business at that time, but devoted himself closely to mastering its details. There are men still employed in the factory who remember to have seen him many times in the early days operating a mill. In a few years he had obtained control of the company and become its president. He enlarged its plant and extended the business; he introduced new methods and patented machinery for special work, and made great progress in the trade generally. Mr. McClymonds stated recently that when he assumed the management of the Cleveland Rubber Co. their annual sales did not exceed \$30,000 a year. Within twenty years their capital had been increased to \$650,000 and the volume of business proportionately.

In 1881 Mr. McClymonds organized the Chicago Rubber Works, incorporated in 1882 with \$80,000 capital, which amount was successively increased until it reached \$250,000 in 1890. Mr. McClymonds was president of the new company, and for the next ten years he divided his time between Cleveland and Chicago, active in the management of the two concerns. At the time of the establishment of the Chicago factory Gilbert W. Blanchard, who had been employed at Cleveland, was placed in charge of the new enterprise, and continued in close association with Mr. McClymonds up to the time of the retirement of the latter from the rubber business.

In 1892 these two rubber companies were combined with the New York Belting and Packing Co., Limited, and one or two other concerns, under the name of the Mechanical Rubber Co., under the management of Mr. McClymonds, who at that time removed

his residence to New York. A more extensive combination resulted in 1899, when the companies referred to were all included in the Rubber Goods Manufacturing Co. In December, 1902, Mr. McClymonds resigned as a director, president, and general manager of the Mechanical Rubber Co., and as a director and officer of the several allied companies, with the idea that, having amassed a fortune, he would devote his remaining years to a life of leisure. He recently arranged for the sale of his home at South Orange, and purchased "The Knolls," one of the finest country estates in that region, and it was while supervising the remodelling of his prospective home that his final illness came.

In addition to the services held at South Orange, New Jersey, services were also held on November 11, at Massillon, Ohio, where the body was placed temporarily in the Russell family vault. The Rev. Dr. R. R. Bigger, pastor of the Presbyterian church at Massillon, and the Rev. Dr. J. W. Robins, of the First Methodist Episcopal church, officiated. The pallbearers were C. M. Russell, Warren E. Russell, and Arvine Wales, of Massillon; T. F. Blanchard and E. B. Halliday, of Chicago; M. I. Blanchard and R. S. Pierce, of Cleveland; and John M. Danner, of Canton, Ohio.

Mr. McClymonds is survived by Mrs. McClymonds, whom he married in 1875. She was Miss Annie M. Russell, whose father, Nahum S. Russell, was the founder of the Russell Engine and Agricultural Machine Works at Massillon. The other immediate relatives are two sisters—Misses Mary and Bertha McClymonds—residents of Cleveland, and a brother, Colonel J. W. McClymonds, of Massillon.

Mr. McClymonds's father, who did not retire from business until 76 years of age, was a man of great sagacity, sound judgment, and high integrity, and died possessing the esteem of all who knew him, and his son manifested the same qualities. In the management of the rubber companies in which he was interested, he was able and aggressive. Writing of Mr. McClymonds in the Cleveland *Plain Dealer*, James H. Kennedy says: "He made friends in a quiet way, as he was in all ways a reserved man, except to his intimates, and won the respect and affection of them all. For years he lived in a pleasant home in Audubon Park, in the northern part of New York city, and a couple of years ago purchased a handsome place in South Orange, New Jersey, which he was gradually fixing up to his liking. He was passionately fond of outdoor life and surroundings, loved anything that suggested the farm; was fond of horses, and cows, and dogs. His purpose in locating in Orange was that he could live more of this outdoor life, free to indulge these tastes. He could well afford to, as he had accumulated a large fortune in the years of his business life. He was a man of fine personal qualities and leaves many mourning friends in New York."

Mr. McClymonds was the president of the Peerless Manufacturing Co. (Cleveland), incorporated in 1889 for the manufacture of clothes wringers. In 1892 they commenced the manufacture of bicycles, as a separate branch, still continuing the manufacture of wringers. Both of these departments were closed in 1900, and the manufacture of the De Dion automom-



THE LATE LOUIS K. McCLYMONDS.

bile was commenced, under a license from the French patents. Since then has been developed the well known "Peerless" automobile, which has taken high rank among American built machines. Meanwhile the name of the company has become the Peerless Motor Car Co. Mr. McClymonds's death will make practically no change in the affairs of the Peerless company. L. H. Kittredge, who has been in active charge of the business for a number of years, will continue as treasurer and general manager. E. H. Parkhurst, formerly secretary of the New York Belting and Packing Co., Limited, of New York, has accepted the position of secretary of the company. Mr. McClymonds is understood also to have been interested extensively in street railways in Syracuse, N. Y., and Wheeling, W. Va.

GEORGE BORGFELDT, founder of the extensive New York importing house of George Borgfeldt & Co., died November 20, 1903, at Doeblinz, Vienna, Austria. He was born August 25, 1833, in Meldorf (Schleswig-Holstein), Germany, and at the age of 20 came to the United States and secured a clerical position. In 1857 he opened a store at Nashville, Tennessee, and after eight years settled in New York and became engaged in the commission business. Three years ago he retired. The Borgfeldt house has the agency for the United States and Canada of the Hannoversche Gummikamm-Compagnie, Actiengesellschaft (Hanover Rubber Co., Limited) of Hanover, Germany.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of September, 1903, and for the first nine months of the calendar year, for five years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
September, 1903 ..	\$ 64,947	\$120,695	\$ 200,360	\$ 386,002
January-August.....	568,797	507,897	1,655,396	2,732,090
Total, 1903.....	\$633,744	\$628,592	\$1,855,756	\$3,118,092
Total, 1902.....	513,636	718,759	1,467,000	2,699,395
Total, 1901.....	447,653	567,397	1,321,115	2,336,165
Total, 1900.....	401,604	411,899	1,117,539	1,931,042
Total, 1889.....	(a)153,462	203,921	1,147,165	1,504,548

(a) Included in "All Other" prior to July 1, 1899.

NINE MONTHS FOR LAST TWO YEARS COMPARED.

Gain in belting, packing and hose.....	\$120,108
Gain in "All other rubber".....	388,756
Loss in boots and shoes.....	90,167
Net gain in 1903.....	\$418,697

RUBBER SHIPMENTS TO NONCONTIGUOUS TERRITORIES.

OFFICIAL statement of values, for the three months, July-September, of manufactures of India-rubber:

	1902.	1903.
Alaska.....	\$ 39,388	\$ 43,259
Hawaiian Islands.....	11,760	18,156
Porto Rico.....	14,433	16,746
Philippines.....	52,495	46,672
Total.....	\$119,076	\$124,833

IMPORTS INTO THE UNITED STATES.

VALUES for the first nine months of four years:

	1900.	1901.	1902.	1903.
India-rubber goods.	\$432,907	\$363,254	\$414,121	\$544,048
Gutta-percha goods.....	210,576	86,575	84,765	410,325
Total.....	\$643,483	\$449,829	\$498,886	\$954,373

STATISTICS OF THE RUBBER FOOTWEAR MOVEMENT.

FROM official returns of various countries for the nine months of January-September, 1903, values converted to United States money at par of exchange. The sign + indicates an increase over last year and — a decrease:

	Imports.	Exports.
Germany.....	\$753,746+	\$330,344+
Great Britain.....	[a 819,918]	618,191+
United States.....	None	628,592—
France (special commerce).....	402,508+	95,342—
Austria Hungary.....	168,236+	394 145+

[a—Estimate based upon statistics for preceding two years.]

GERMAN STATISTICS OF RUBBER FOOTWEAR.

NINE months—January to September inclusive:

COUNTRIES.	IMPORTS.			EXPORTS.		
	1901.	1902.	1903.	1901.	1902.	1903.
Russia.... kilos.	425,300	317,400	395,500	....	....	....
United States...	50,800	78,400	87,000	....	....	....
Great Britain....	20,800	12,700	28,400	118,000	186,100	169,000
Austria Hungary.	19,500	8,800	51,800	..	....	....
Sweden.....	15,000	24,900	9,000	..	....	....
Switzerland.....	....	....	....	4,000	9,900	13,400
Roumania.....	....	....	....	2,900	13,000	....
Other countries..	2,800	9,000	4,100	47,600	74,600	95,100

Total, kilos.. 534,200 451,200 575,800 172,500 283,600 277,500

AUSTRO HUNGARIAN STATISTICS OF RUBBER FOOTWEAR.

NINE months—January-September, 1903—in kilograms:

IMPORTS.			
Russia.....	91,000	Sweden.....	1,200
Great Britain..	11,800	France.....	600
United States.	11,700	Returned	....
Germany.....	7,200	goods.....	4,000
EXPORTS.			
Turkey....	90,200	Great Britain.	32,700
France.....	83,000	Italy.....	19,400
British India..	81,700	Belgium.....	16,700
Germany....	66,100	Egypt.....	9 300
Roumania....	59,700	Switzerland...	8,200
Total.....	127,500	Total.....	485,400
Nine mos.'02.	115,400	Nine mos.'02.	366,200
Nine mos.'01.	122,300		

THE AMAZON RUBBER CENTERS.

THE *Brazilian Review* (Rio Janeiro) says: "Pará papers are big enough in all conscience, but are full of nothing but politics and give little or no news of general interest. After reading a dozen or two we have been unable to discover a single word as to the prospects of the rubber season, whether it is likely to be good, bad, or indifferent. Not a word, even, as to the condition of the rivers, though to judge by the entry at Manáos of 15 steamers with 582 tons it is presumed the season has begun."

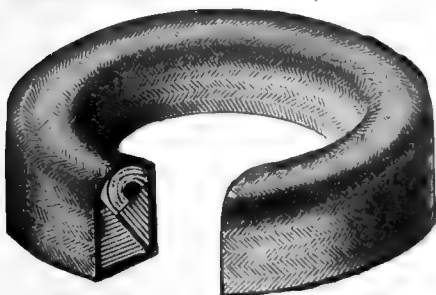
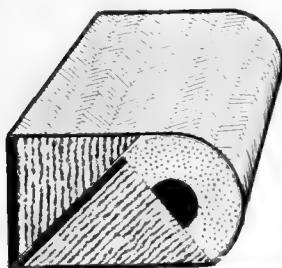
A correspondent writing from Manáos to the *Pará Folha do Norte* says: "In a few years Manáos will be far and away above Pará. The buildings are finer, the tramways better, the people more animated, and the women prettier. Here everyone seems satisfied and hopeful. There from the crown of their hats to the soles of their boots, everyone betrays a state of impecuniosity! Manáos is going up whilst Pará is going down."

ASBESTOS IN FINLAND.—Rudolph Kroseberg (Berlin W. 15, Germany) informs THE INDIA RUBBER WORLD that while the existence of asbestos in Finland has been known for several years past, the exact location and extent of the best quality has been determined only very lately. The location is in the center of Finland, convenient by railway to the seaport of Wiborg. The quantity he reports very large. The substance is stated to be very light in specific gravity, almost snowwhite, smooth in fiber, "the longer parts of which can be spun alone or together with other qualities of asbestos, while the short parcels will do most excellent service as insulating material, filtering, paste-board, and for other purposes."

NEW GOODS AND SPECIALTIES IN RUBBER.

PILLEY'S EXPANSION WEDGE PACKING.

THE merits of the article herewith illustrated are that it has both a perfect expansion and a practical wedge. The parts are so placed as to afford the greatest amount of wear with the least possible friction. The material is finely woven cotton duck, with high quality rubber friction between the plies. It contains no loosely woven hemp or jute to rot out and cause trouble in the valves, and, not being loaded with unnecessary oil and tallow, it weighs much less than other wedge packings, resulting in less cost to the purchaser. This packing is made in all sizes, from $\frac{1}{4}$ inch to $1\frac{1}{2}$ inches (by sixteenths), and is furnished in



rings cut and molded to fit rods, or in 5 pound boxes up to and including $\frac{5}{8}$ inch—larger sizes are made in 12 foot lengths—and carefully wrapped in muslin for protection against dust and grit. This packing is adapted

for steam, water, ammonia, hydraulic, air, oil, and other purposes, and is patented. [Pilley Packing and Flue Brush Manufacturing Co., No. 606 South Third street, St. Louis.]

HANOVER EXCELSIOR ATOMIZER.

THE advantage claimed for an atomizer with a double rubber bulb is that a continuous spray is obtained with slighter effort than with a single bulb. Where long application is necessary,

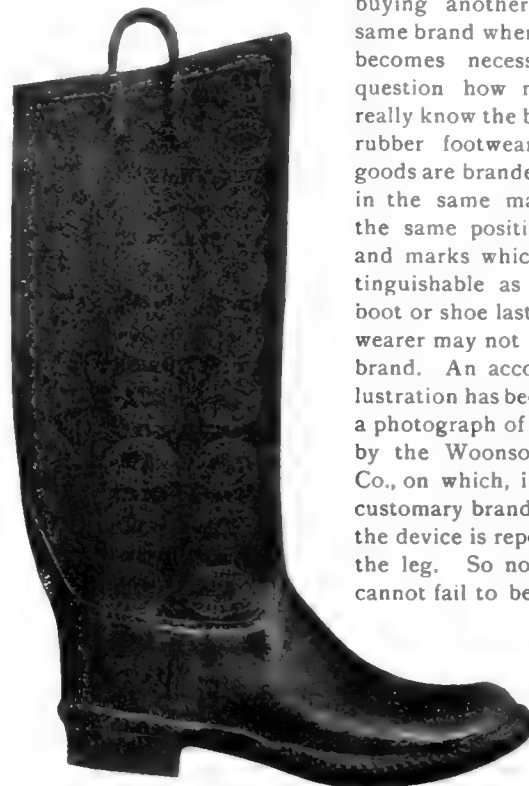


the hand may become tired by the constant pressure of the bulb, and a device which prevents such fatigue is exceedingly desirable. It is also pointed out that where the rubber used is of the proper quality less hand pressure is required than in the case of other rubber, on account of the bulb yielding more read-

ily to pressure, and this merit is possessed by the atomizer shown in the illustration. [Hanover Rubber Co., Limited—George Borgfeldt & Co., American agents, New York.]

A RUBBER BRAND THAT CAN BE SEEN.

WHILE it is to be expected that the wearer of a rubber boot or shoe who has been well satisfied with it will feel confidence in

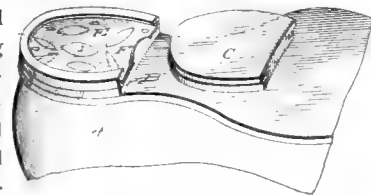


buying another pair of the same brand when another pair becomes necessary, it is a question how many persons really know the brand on their rubber footwear. All such goods are branded on the sole, in the same manner and in the same position, in letters and marks which remain distinguishable as long as the boot or shoe lasts, and yet the wearer may not often see the brand. An accompanying illustration has been made from a photograph of a boot made by the Woonsocket Rubber Co., on which, instead of the customary brand on the sole, the device is repeated all over the leg. So novel a feature cannot fail to be observed by the wearer every time he sees the boot, and thus become firmly im-

pressed upon his mind. The manufacturers, in thus seeking to connect their name with their product, evidently go upon the assumption that, a pair of their boots having been given a trial, the wearer will want another pair of "Woonsockets" when the time comes for replacement. And yet these boots are not regarded as needing to be replaced very often.

A RUBBER HEEL HOLDER.

THE device here illustrated involves the combination, with the heel, of a metal plate secured to the bottom of the heel, said plate having its side and rear edges bent downward and inward to form a retaining flange, a downwardly projecting tongue formed integral with the forward edge of the said plate, and a rubber heel arranged between the said flange and tongue of the said plate. Philip A. Jahn, Cleveland, Ohio, has obtained United States letters patent [No. 740,760] on this device.



A RUBBER AUTOMOBILE VEIL.

AMONG the novelties in draped veils for ladies' wear is one of tan rubber. It is gathered around the top on a ribbon, which is tied under the brim of the hat and is then thrown

over it. It is absolutely waterproof and dustproof. It folds in a case the size of a ladies' pocketbook and can be carried without any inconvenience. It looks like a silk chiffon veil, and is just as light. These veils are particularly adapted for automobiling, driving, and stormy weather. It will fit over a hat of any size and will not harm the trimming. The demand for these veils is constantly increasing as the ladies realize their many advantages.

CRAVENETTE IMPORTERS WIN.

THE decision of the board of United States general appraisers against Brown & Eadie relating to a protest made by them against the collector of customs at New York, was reversed on November 25 by Judge Townsend in the United States circuit court. The case is known as the Cravenette cloth case, and comes under the Tariff act of 1890.

In 1893 Brown & Eadie made an importation of cravenette cloth which was assessed for duty by the collector of customs as woolen or worsted cloth, under said Tariff act at 44 cents per pound and 40 per cent. *ad valorem*. The importers filed a protest with the board of general appraisers, who upheld the collector. In their protest Brown & Eadie claimed that the merchandise was assessable as waterproof cloth at 15 cents per square yard and 30 per cent. *ad valorem* under paragraph 369.

The opinion of the board in overruling the protest was written by Judge Henderson M. Somerville. In his decision Judge Somerville stated that cravenette cloth was not a waterproof but was a cloth which had been subjected to a process which made it water repelling although it was not absolutely waterproof, inasmuch as a quantity of water would soak through it. His opinion further stated that the commercial interpretation of the meaning of waterproof cloth was a cloth in which was rubber, oilcloth or some material rendering it waterproof in fact as well as name.

The attitude of the government in the matter is, that if woolen cloth after undergoing a process can be classified as waterproof the entire woolen schedule is liable to be abolished.

Over 500 similar cases are suspended awaiting the outcome of the final decision in regard to cravenette cloth. The case will be taken to the United States court of appeals.

RUBBER HOSE STILL IN USE.

RUBBERMEN have their full share of the privilege of reading obituaries of their business, and no doubt some of the obituaries that are published escape their notice. That may be the case with one published more than a year ago in the Philadelphia *Record* which is brought to attention at this late day only on account of the exceeding liveliness of the supposed corpse.

The article in question was an account of a metal hose which seems on paper to be an excellent device for some kinds of work to which rubber hose is not perfectly adapted. But the point of present interest lies in the opening sentence of the article, which reads: "Rubber has been entirely supplanted in the manufacture of hose, an industry which it was long thought could be conducted only by the use of the sap of the rubber tree."

We may pass without comment the writer's evident profundity of knowledge of crude rubber and stop only long enough to query what he supposed the manufacturers of rubber hose were doing with their product. It is of interest to note, however, that there was never a year in which rubber hose was produced in so great quantities as the year directly

following the entire supplanting referred to by the Philadelphia discoverer, and when sales were so large in amount. Rubber is still used in fire hose, in garden hose, in brake-coupling hose, and in all the dozens of minor varieties of hose that are made and adapted to special purposes.

One sometimes wonders at the persistence of the rubber hose market, but reflection upon the growing demand especially for the kinds just specified makes the problem an easy one. Besides the natural demand to replace worn out goods, there is a rapid growth in all our cities, necessitating new supplies of fire hose for new districts and garden hose for lawns and gardens cultivated on what has been waste land. The rubber hose business in all its branches is very much alive; and we do not hear that the metallic substitute has even made its competition felt. The obituary will have to wait.

GENERAL JEAN NOT FORGOTTEN.

THE following, from the *United States Investor* (Boston), recently, refers evidently to General Joseph M. Jean, mentioned some years ago in THE INDIA RUBBER WORLD in connection with the "Jean Rubber Co.," as well as the company named below:

"9922. (Allentown, Pa.). We would be pleased to learn something in reference to the Franco-American Rubber Co. We believe that this is a company incorporated under the laws of the state of West Virginia, with offices at New York.

"Ans.: We can find no record of this company in New York city. From an authority on rubber and rubber companies, however, we learn that such a company existed back in 1896, though its life was short and sweet. A certain Frenchman, ex-army officer and consul, for want of some more lucrative means of employment, finding some rubber lands in French Guiana, conceived the brilliant idea of floating a rubber company that should rival the wonders of the "Arabian Nights." Some influential New York people were got into the directorate and enough stock sold to guileless investors to pay Mr. Johnny Crapeau's expenses to England, where he made himself and scheme prominent enough to get considerable newspaper notoriety. After this, he and company escaped from the stage of public attention. Only 400 kilos of rubber were ever shipped, which fact is the best commentary as to what the company amounted to."

But where is General Jean?

RUBBER BOOTS FOR CITY WEAR.

"DOES anybody wear rubber boots nowadays? Why, we can't supply the demand," said the rubber dealer. "True, you don't meet large numbers of men walking down Broadway in rubber boots, but you would meet plenty of men wearing them in the subway.

"And stablemen wear them, and carriage washers; and men in fish markets. Rubber boots are worn in fact by many workers of one sort and another in the city.

"In the country rubber boots are worn by farmers and miners, by lumbermen, fishermen, and hunters, and there are many so worn.

"Coming back to the city, you will find rubber boots worn in large numbers by small children; every schoolboy wants a pair of rubber boots, and a great many get them; they have largely taken the place of the famous old red tops of years ago.

"Does anybody wear rubber boots in these days? Well! I should say yes with great vociferosity."—*New York Sun*.

INTERVIEWS IN THE NEW YORK TRADE.

I—WITH A CRUDE RUBBER MERCHANT.

"PRICES of rubber, while showing some firmness and a tendency to advance in the closing days of the month, were on an average much lower at the end of November than at the end of October. The average spot price for Upriver Pará was about 10 cents below the price of thirty days previous. From the high point to which prices soared sixty days ago, there has been a decline of from 15 to 17 cents. The stocks of crude rubber in the market are not large, and the demand at the close of the month was more active than it has been in recent weeks.

"The causes for the decline in prices are not hard to determine. It is the general consensus of opinion of the best posted men that prices had been pushed too high for the general conditions of business and trade. In other words, the prices of rubber two months ago were out of line—higher than the manufacturer could afford to pay and do business at a profit: There was very little buying at the top prices, and such as was indulged in by the manufacturers was in cases of necessity. That the high prices were the result of speculation, or at least the movement of speculators, is a very prevalent opinion, and it is also the opinion that some of those engaged in the movement were found, when the break came, with considerable amounts of high priced rubber still on their hands. It is hardly probable that the prices which marked the closing days of September will again be reached, nor is it considered by the best judges of conditions that violent price fluctuations in the near future are probable.

"In the manufacturers' hands stocks are regarded as rather light, an inevitable sequence of high prices, and the inquiry at the close of the month was more active. The general conditions of trade do not, however, warrant the belief that there will be an extensive demand for rubber at high prices, or indeed at any price. While all the factories are running at about the usual activity for this period of the year, reports from salesmen are not entirely satisfactory. Many things contribute to render the outlook lacking in encouragement: The high prices of money, the disturbances of the Wall street market, the many strikes which have made idle concerns that are large consumers of rubber, and the open, pleasant weather that has prevailed during the fall.

"While it is true that business during October and November was better than for the same months last year, it was hardly so good as had been anticipated in view of the unusual activity during the spring and summer. Most of the factories are fairly loaded with spring orders, which insures steady occupation during the winter, but new orders are indicating a slight diminution. It is of course recognized that the last three months of the year are always the duller in the year for the manufacturer, in the matter of sales. The dealer has purchased and received his fall and winter supplies, has probably ordered his spring goods, and is at the moment interested chiefly in disposing of his stock."

II—WITH A RUBBER MANUFACTURER.

"I AM a bear on the rubber market," said the head of one of the largest manufacturing concerns, "for the very good reason that I believe that goods cannot be profitably made from rubber any higher or even as high as it is at the present time. We have had in this country since 1899 such a tremendous wave of prosperity—or 'boom,' if you choose to call it such—that there has been demoralizing inflation and overproduction. We must get down to a reasonable basis, where money is made more slowly, before we reach the points of safety. The recent panic

in Wall street has been a rich man's panic and will not affect, except collaterally, the rubber industry, but it will of course to a degree be felt. For instance, I look for a falling off next year in the demand for automobile tires. The automobile is essentially the rich man's device, and the present money panic will be felt. There will be some restriction felt in the vehicle solid tire trade, also, and while this may not be noticeable in the number of tires sold, it will be appreciable in the quality, the average cost being probably less.

"In other rubber goods I look for the same conservatism to a certain extent, and I believe that manufacturers will be inclined to figure the cost of goods very closely. For these reasons I do not look for higher priced crude rubber. High priced rubber makes high priced goods, and if the manufacturer cannot sell high priced goods he will not buy high priced rubber. I do not believe all of this talk about short crops and light stocks. There is no reason why the crop of rubber should be any shorter than the average unless there are floods, or low water or revolutions, or some other demoralizing cause. There is as much rubber to be gathered and there are as many gatherers, and high prices should have the effect of stimulating the production rather than retarding it.

"The recent high prices were made by speculators, and some of them made money at it and some of them are holding rubber they cannot sell for what they paid for it. The rubber manufacturer must calculate very closely now, or he will lose money rapidly. The business has been demoralized in the past by men who thought it was a 'bonanza' and rushed in without understanding it. In order to get business they undersold their rivals without counting closely enough, and they went to pieces. The history of the trade is strewn with such wrecks."

"How about the stocks of crude rubber in manufacturers' hands?"

"Some have four months' or three months' supply and some, I understand, have gone down to almost the point of exhaustion. Some manufacturers are conservative and only buy as they need the rubber, while others are speculative and buy far ahead when they believe a favorable opportunity is offered."

III—WITH A MANUFACTURER.

ANOTHER manufacturer, who also is the head of a large company, was inclined to be pessimistic. "The competition is so great," said he, "and the cost of material and labor so high, that I do not think the outlook is at all alluring. The 10 per cent. advance that was announced by the principal manufacturers about sixty days ago has practically been rescinded, and while there has been no official notification to that effect, every one of them, our firm among the number, is selling on the old basis. This indicates that under present conditions high prices for rubber goods cannot be maintained, in spite of high prices for rubber and duck and other material.

"These high prices are cutting into the profits, and I believe it will require very careful management for some of the weaker brethren to pull through. The factory expenses of our plant will this year be about \$80,000 more than last year, although the volume of business is very little increased. Business in every direction has been expanding too rapidly, and there must be a readjustment before things will be safe. At the present time business is dull, very dull as far as new orders are concerned, and I do not look for much increase before March. As far as the stocks of crude rubber are concerned in importers' hands, I believe they are plenty, fully up to the average. In the manufacturers' hands they are light, but I think purchases will be sparingly made for the next six months. I do not think prices will fluctuate very much, either up or down, for a good while to come."

IV—WITH A RUBBER MERCHANT.

"FROM the first of November until about the twentieth the prices of spot Upriver Pará declined on an average 10 cents per pound. In the last week of the month there was a firming up and higher prices prevailed, the advance being something like 2 or 3 cents. Stocks in manufacturers' hands are light, particularly in coarse Pará. This has been brought about of course by the high prices that have prevailed, and the activity of the factories during the summer. Now the manufacturers must buy, and within the past few days the inquiry for rubber has been very active. This is the dull season for the factories and for selling rubber, but the shortness of the stocks is stimulating buying. Reports concerning the yield of rubber are very conflicting, but I do not believe it will quite reach the average. At present the supply of crude rubber in all markets is light, and whatever lots are offered are taken up rapidly. There seem to be just at the present time buyers for more rubber than there is for sale. An accident to a ship bearing a large amount, or any delay in arrival, would make the demand very acute."

THE TEXTILE GOODS MARKET.

DECEMBER finds many of the consumers of cotton duck and sheetings still in a waiting attitude. It was a most fortunate piece of foresightedness which the rubber trade displayed a year ago when they contracted for a much larger supply of duck than they could possibly use, for the material was bought at 3 cents per pound less than it can be bought for now, and many of the mills are still using these goods, instead of having to come into the market and pay the higher price. The cotton duck mills will be compelled to run on old contracts until the middle of January before they are completed. Meanwhile the rubber hose and belting manufacturers are considering their future requirements, and while some of them have already made contracts for the next year, others are negotiating. All consumers of duck have been waiting for the cotton market to assume a settled condition before they attempted to provide for the future, but after deferring this matter two months they find themselves in no better position than before. Engagements that have been made for the next season have been on a basis fully 3 cents per pound higher than last year; that is, instead of paying 17½ cents per pound for duck, they are paying 20½ cents. But instead of cotton being 8 cents per pound as it was a year ago, it is now 11.30 cents. It will therefore be seen that the duck mills are not getting a parity price for their goods. The same conditions apply to the market for sheetings used by the rubber trade.

It is the general opinion that the rubber consumers of cotton textiles will not defer their contracts longer, as it is pretty well understood that the price of raw cotton will remain where it is if it does not go higher during the next few months. One thing certain is that the duck mills are buying cotton at its current price. One seller in the local market informed THE INDIA RUBBER WORLD representative that his house had paid its mills during the present month \$75,000 in excess of the amount paid them last December, with which to meet the advanced price of cotton. The reactionary tendency in contract cotton, amounting to a loss during the past week of 22@32 points in New York, Liverpool, and New Orleans, has had but little effect upon the spot cotton market. Following are the prices of cotton middling upland spots at the ports of New York, New Orleans, and Liverpool:

	New York.	New Orleans.	Liverpool.
November 7	11.05 c.	10½ c.	5.94d.

November 14	11.50 c.	11.00 c.	6.14d.
November 21	11.30 c.	10¾ c.	6.02d.
November 28	11.30 c.	10½ c.	6.04d.

Belting manufacturers have bought considerable duck during the past month, and although prices have been a restricting factor these concerns are coming forward more numerous, and December will doubtless see the greater part of them covered with duck for the season.

The felt mills have secured a fair amount of business from the rubber boot makers, but higher prices have had the effect to cause consumers to go slow, and confine their purchases to actual necessities. The wool market is exceedingly strong, with little in sight to encourage manufacturers to hope for lower values this season. The seaboard dealers have paid high prices for their wools and are evidently determined to hold them until users come to their terms.

As has been stated before in these pages, contracts with the duck manufacturers are this year made on an entirely different basis from those last year, in that the mills ask consumers to stipulate more closely the amount of goods that are going to take. In other words, the rubber people are not allowed so much latitude as before. Canadian rubber manufacturers are still running on the duck they bought a year ago, having at that time bought unusually heavy in anticipation of higher prices as a result of the threatened 25 per cent. duty on ducks entering the Dominion. It is believed, however, that before the end of the present year the greater part if not all of the rubber manufacturers both in the States and in Canada will have arranged for their next year's supply.

The rubber footwear trade have been taking good quantities of sheeting during the past month, and the present week has noted considerable interest. Prices have advanced about ¼c. per yard during the month, and sellers are standing firmly on these prices.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

	Pick.	Yds. to Lb.	
36" Household Favorite,	56x60,	4.00	5½ cents.
40" Household Favorite,	56x60,	3.60	6 cents.
36" Henrietta, L. L.,	48x52,	4.00	5¼ cents.
39" Henrietta,	68x72,	4.75	5 cents.
38½" Henrietta,	64x64,	5.15	4½ cents.
40" Henrietta,	48x40,	2.85	(part waste) 6½ cents.
36" Florence C.,	44x44,	6.15	4 cents.
40" Majestic C. C.,	48x48,	2.50	7½ cents.
40" Majestic B. B.,	do	2.70	7 cents.
40" Majestic B. B.,	do	2.85	6½ cents.
40" Elcaney,	do	3.60	5¾ cents.
36" India,	do	3.00	6¼ cents.
<i>Sheetings.</i>			
40" Highgate...	5¾c.	40" Selkirk...	7½c.
40" Hightown...	6 c.	40" Sellow....	7¼c.
40" Hobart....	6½c.	48" Mohawk....	10 c.
40" Kingstons...	7½c.	40" Marcus...	5½c.
39" Stonyhurst...	5¼c.	40" Mallory....	5 c.
39" Sorosis....	5 c.	36" Capstans....	4 c.
40" Seefeld....	8 c.	Osnaburgs.	
		40" Iroquois....	9 c.
		40" Shamrock...	9 c.
		<i>Ducks.</i>	
		40" 7 oz. Cran-	
		ford....	8¼c.
		40" 8 oz. Chart-	
		res....	8¾c.
		40" 10 oz. Carew.	11 c.
		40" 11 oz. Carita.	12 c.

THE second edition of Catalogue No. 115, the condensed general catalogue of the B. F. Sturtevant Co. (Jamaica Plain, Massachusetts), has gone to press and will very soon be ready for distribution. A few pages in this revised edition have been devoted to Factory and Industrial Railway Equipments, a new departure of this enterprising concern. The outgrowth of the success attained in equipping their new plant at Hyde Park was the manufacture of this new line of products.

WHILE the leading tire manufacturers expect to be well represented at the large automobile shows in New York and Chicago this winter, they will not make exhibits at the numerous local shows that have been or may be organized.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The Haskell Golf Ball Co. have won their suit against A. G. Spalding & Brothers in the United States circuit court in the southern district of New York, the defendants having confessed judgment on \$10,000 for the infringement of patents owned by the Haskell company. This suit was one of several brought by the Haskell company against manufacturers of golf balls, for infringement of patents, and the result of similar suits which are yet unsettled is said to promise favorably for the plaintiffs. The Haskell company own the patents for the Haskell ball, which is a wound rubber cored ball, the invention of Mr. Coburn Haskell and Mr. Bertram G. Work, vice president of The B. F. Goodrich Co. of this city, and the great popularity of this ball among golfers has resulted in other manufacturers trying to imitate it. The Spalding company made a ball of a similar nature, and when brought to task about it by the Haskell company claimed that as base balls in which some rubber thread is used were made prior to the manufacture of the Haskell ball, the latter is no novelty. As the Spalding company have long been noted as the makers of base balls, they felt secure in their claims, and fought the suit brought by the Haskell company. They have evidently thought better of it since, as they have not only confessed judgment for \$10,000 and agreed to pay the costs of the suit, but have entered into an agreement with the Haskell company for a license to make the Haskell ball. Mr. B. G. Work, vice president of the Haskell company, states that the result of the suit is very satisfactory to them, as the confession of judgment amounts to a vindication of the claims of the company. Mr. Work also stated that there is nothing new to say in regard to the patent infringement suits of the Haskell company against The Kempshall Manufacturing Co.

* * *

THE plant of the India Rubber Co., or rather that portion which was not destroyed by the fire (in March, 1903) which caused the removal of the company from this city, has been purchased by a company of Pittsburgh and Cleveland capitalists, formed for the manufacture of cutlery. The plant was purchased for about \$50,000, including the office building. The deal closes the history of one of Akron's most successful enterprises, as everything connected with the former company has been removed to the plant of the new company, The India Rubber Co. of New Brunswick, New Jersey.

* * *

THE plant of the Lyon Rubber Co., which went into the hands of a receiver on October 6, is again in operation. Receiver Kling disposed of the machinery to Ossian G. Lyon, who was vice president and manager of the company, for \$669.98, and the raw material and finished goods to David G. Armstrong, who was its secretary and treasurer. These gentlemen will continue the business, under the name O. G. Lyon, making rubber gloves, finger cots, and other dipped goods. Receiver Kling has not yet made a report, owing to the accounts which remain to be collected, but is of the opinion that the creditors will receive 50 per cent. of their claims.

* * *

THE night watchman at the plant of the Pure Gum Specialty Co. (Barberton) prevented the plant from being robbed on the night of November 20. He was attracted by a noise in the rear of the plant and got to the scene in time to prevent two men from entering. One of the men, in his hasty retreat, dropped his hat. The next day the Barberton police saw Frank Lee wearing a straw hat, and placed him under arrest. The hat

found by the watchman was identified as the one worn by Lee prior to the robbery, and he is held pending a trial for attempted burglary.

* * *

AFTER a trial lasting several days a jury in the court of common pleas returned a verdict against the Diamond Rubber Co. in the suit of Addison McClurg, who sued the company for \$20,000 damages, alleged to have been sustained by reason of the negligence of the defendant company. McClurg lost a hand in one of the machines at the factory of the company some time ago. He operated a calender, and in his petition, alleged that the rolls of the calender were not properly guarded. McClurg was awarded \$2,100 by the jury. The case may be carried to a higher court.

* * *

AN option has been taken by Pittsburgh parties on the plant of the People's Hard Rubber Co., which has been standing idle since the failure of that company, and it is stated that a company will be formed for the manufacture of street railway specialties. It is one of the best rubber plants in Akron, but it was dismantled soon after the purchase of the assets of the company by New York interests, and has not been used since.

* * *

JOHN F. IVES, the inventor of an automobile tire, has filed a suit in the court of common pleas at Akron, against the Diamond Rubber Co., for damages in the sum of \$5563, for the alleged violation of contract. The plaintiff alleges that he entered into a contract with the Diamond company on April 2, 1902, to work for them at a fixed salary, and to give the company the exclusive right to manufacture and sell his tire. He alleges that the company has refused to manufacture the tire under his patent, though retaining the exclusive right to do so until April 2, 1903. By this action, the plaintiff says, he was restrained from manufacturing the tire on his own account which he could have done with good profit. He states that the company agreed to pay him not less than \$1000 per year in quarterly installments, and paid but two installments.

* * *

WHEN a good sized convention is to be held in Akron, as has happened several times within the past year or two, the circulars descriptive of the city, sent out in abundance by the local committees, invariably call attention to the importance of the rubber industry here, and delegates are promised a trip through the principal factories as one of the events of the visit. This promise is seldom made good, however, on account of the unwillingness of the rubber manufacturers to open their works freely to inspection. But the disappointment of the delegates is mitigated in part by the distribution of rubber souvenirs of some sort. In former years delegates could expect to secure souvenirs emblematic of Akron's potteries and clay product companies, but these are never thought of now. Just now the most popular souvenir of the "Rubber City" is a miniature hot water bottle holding about a quarter pint, which really is a useful article. It can be used as a face bottle, and delegates who are fortunate enough to secure one of them count themselves favored. This souvenir first came into popularity upon the occasion of the second state campaign opening of the Republican party here two years ago, when the local press committee, in search of souvenirs, hit upon the idea of miniature water bottles, and secured a supply of them for the visiting newspaper men. The visitors displayed their souvenirs to men high in the councils of the party who were present, and they in turn besieged the local press headquarters in quest of the neat little souvenir, and since that time the miniature bottle has been a great favorite. At the recent conclave of the Knights

Templars of Ohio in Cleveland, Akron Commandery, No. 25, took 2500 of these souvenirs to Cleveland, and during a reception gave each visiting lady a bottle as a souvenir of the "Rubber City." They made the hit of the convention, and every delegate wanted one of them. Many other rubber novelties are used. Fountain pens, made in Akron, are always favorites, and anything else in the rubber line is always eagerly sought. Thus everything tends toward a change from the "Tip Top City of the Western Reserve" to the "Rubber City," and no Akron citizen will object to the change, for through her rubber factories 5000 men and women, boys and girls are given employment, and one-third of Akron's population is clothed and fed.

* * *

A LOCAL rubber man, in discussing the large amounts of money which are tied up in Akron rubber concerns, said: "It is a fact of which most people are unaware, that rubber companies spend large amounts every year in experiments. Ambitious inventors who believe they have at last acquired a patent which will fill a long felt want secure an audience with the proper official of a rubber company, and if they are successful in satisfying him that their inventions are practicable, he will spend money liberally in getting them in shape to be put on the market. Nine times out of ten, when the article is a good one and the expert rubber men get to work upon it, they produce an article better than the inventor ever dreamed of, and the company foots the bill. Many times the article does not 'pan out' as expected, and the rubber company finds that it has a large amount to be charged up to profit and loss, which was expended in time, material, and labor in an endeavor to perfect an invention. In a big company thousands of dollars go to waste in this manner every year. Besides, the companies are constantly experimenting with new compounds, secret processes, etc., which eat up large sums in the course of a year that would materially increase the dividends if they could be used for that purpose. The rubber business is a great business, but because of the fact that it is practically in its infancy, and new uses for rubber are being found every day, it takes lots of money to conduct it successfully."

* * *

MR. WILL CHRISTY, president of the Firestone Tire and Rubber Co., has created a sensation among street railway men by offering to build in Cleveland a street railway upon which he agrees to charge a two cent fare, or sell 13 tickets for a quarter. Mr. Christy has always been known as a conservative traction man, and one who maintained that a five cent fare was essential to the life of a street railway corporation. Mr. Christy is first a street railway man, and secondly a rubber man. Perhaps the fact that he has only recently become identified with the latter business accounts for his paying more attention to the traction business, with which he has been identified for many years, and in which business he has accumulated a considerable fortune. Mr. Christy is evidently in earnest in his offer to build a two cent fare road, but he refuses to tell of his plans at present. Mr. Christy is first vice president of the Northern Ohio Traction and Light Co., and until recently was president of the Southern Ohio Traction Co. He was one of the original stockholders of the People's Hard Rubber Co., but disposed of his stock before the failure of that company.

* * *

The election of Mr. Ohio C. Barber to the presidency of the United Boxboard and Paper Co., was not unexpected in Akron, where a large part of his business interests are located. Mr. Barber is one of the directors of the Diamond Rubber Co., and

the factory of that company was formerly the plant of the Diamond Match Co., later removed to Barberton. Mr. Barber is said to be one of the largest stockholders of the Diamond Rubber Co., and he is also largely interested in many other large enterprises. The fact that the success of the strawboard trust was deemed dependent upon his accepting the presidency is particularly gratifying to his friends and business associates.

* * *

BOWLING is the latest game to be taken up by employes of some of the Akron rubber companies. A new team, called "The Rubbernecks," promises to be one of the best in the city, if the first game of a series bowled recently may be taken as a criterion. It won two out of three games rolled with the "Grands," the strongest team in the county. Joseph Dangel, superintendent of the plant of the American Hard Rubber Co., is a prominent member of the team. He is the inventor of a hard rubber ball, mention of which was made in a recent issue of THE INDIA RUBBER WORLD, and all the members of the team use this ball. Other members of the team are Edward Bullock, John Tillett, L. C. Ball, M. A. Germann, and Charles Blank, all employes of rubber companies.

* * *

THE Swinehart Clincher Tire Co. is the name of a new company recently organized in this city for the manufacture of solid vehicle and automobile tires, under patents owned by Mr. J. A. Swinehart, who was formerly vice president of the Firestone Tire and Rubber Co. Mr. Swinehart's patents are radical departures from those of other manufacturers, and especially is this noticeable in the vehicle tires, which he will place upon the market in a short time. The vehicle tire is fastened to the rims without the use of wires, and is called a clincher tire. The new tire fits into a specially prepared channel, doing away entirely with the use of wires. The automobile tire is also a clincher, and great things are claimed for it. At the present time the company are doing a great deal of experimenting with the tires, and are having them made at different factories in Akron. It is the intention ultimately to build a factory for the manufacture of these tires.

* * *

MR. ALEXANDER ADAMSON, owner of the Adamson machine works, in which many machines used in the rubber trade are made, is completing a handsome residence in the outskirts of Akron, which attests his love for country life. The house is hidden among the hills in a spot where street railways and other modern conveniences of everyday life are as yet unknown. It will be one of the most handsome homes in this section of the state.

Mr. James A. Braden, advertising manager of the Diamond Rubber Co. and a former well known newspaper man of Akron, has just published his second book, "Connecticut Boys in the Western Reserve." It is a companion story to his first book, "Far Past the Frontier," and was written before he accepted his present position. Mr. Braden has made a specialty of writing for juvenile readers.

The Diamond Rubber Co. are very proud of the record made by their tires in the recent endurance contest for automobiles from New York to Pittsburgh. It is stated that 12½ sets of Diamond tires used in that contest reached Pittsburgh after a contest such as had never been had before, at an average cost per car of 5½ mills per mile. Fifteen and one-half sets of Diamond tires were on the 34 cars that started from New York, and five sets of these tires finished the run without so much as a puncture, and one of these ran a number of miles on a railroad.

NEWS OF THE AMERICAN RUBBER TRADE.

THE HASKELL GOLF BALL SUITS.

ON November 6 A. G. Spalding & Brothers (New York) confessed judgment to the extent of \$10,000 in an action brought against them by the Haskell Golf Ball Co. and The B. F. Goodrich Co. The case was brought in the United States circuit court for the southern district of New York and alleged infringement of patent. After taking testimony in the case and before final hearing, Spalding & Brothers surrendered, admitted the infringement, and agreed to pay the sum named as damages and the costs of the litigation. The suit was brought on the patent obtained April 11, 1899, by B. G. Work and Coburn Haskell, for a golf ball composed of a rubber center and a guttapercha casing. The Spalding firm were making and selling a ball known as the "Wizard," but its construction was practically identical with the Haskell ball. Subsequent to the confession of judgment the owners of the patent granted a license to the Spaldings to manufacture upon the royalty basis and that firm will continue to put its product on the market, under the label used hitherto.

The decree of the court is of especial interest in that it declares the validity of the patent, the second paragraph stating, after the granting of the papers had been recited:

That the said B. G. Work and Coburn Haskell were the first, true, original, and joint inventors of the invention described in said letters patent, and claimed in the claims thereof, and that the said letters patent are good and valid.

A perpetual injunction was also entered against Spalding from making, using or selling any golf balls made under this patent without license from the patentee. The decree is signed by Judge Lacombe.

Quite a number of other suits similar to the one against Spalding & Brothers have been brought by the same firms. In the suit against Patrick Brothers, dealers, of New York, it is understood that a similar decree has been agreed upon to the one quoted above. In this case the damages have not been settled, but the business that has been done is being determined by accountants. Another suit is against The Kempshall Manufacturing Co., of Arlington, New Jersey. In this suit testimony is still being taken. There is also a suit against the Swift Golf Ball Co., of New York, in which testimony is being taken. Suit has been recently filed against the Worthington Manufacturing Co., of Elyria, Ohio, manufacturing a ball known as the "Standard," which the Haskell company claims is an infringement. [Further details regarding the Haskell golf ball litigation appeared in THE INDIA RUBBER WORLD, of August, 1902 (page 366), and December, 1902 (page 102)].

AMERICAN TUBING AND WEBBING CO.

THE receivers of the American Tubing and Webbing Co. (Providence, Rhode Island) announce for public sale on December 1 (the date of this issue of THE INDIA RUBBER WORLD) all the property of the said corporation other than cash and accounts receivable. This course has been rendered necessary by the embarrassment of the company growing out of the failure of Dresser & Co., commission merchants of New York, as already detailed in these pages. The factory is offered for sale as a going concern, with the good will of the business. The property includes about 37,000 square feet of land in Providence, with a five story brick building 248 X 54 feet subject to a mortgage for \$25,000; a very complete equipment for the manufacture of flexible tubing for gas stoves, drop lights, etc.,

elastic webbing for suspenders, garters, and the like, of both silk and cotton weaves, hat elastics, elastic braids, and all, similar products. There are mentioned 150 looms for webbing, 578 braiders and twisters, and accessory appliances; also all merchandise in stock, manufactured or raw.

The American Tubing and Webbing Co. was incorporated May 31, 1889, as the Rhode Island Knitting Co., the name being changed January 31, 1890. The first factory, for various elastics, was located on Acorn street, Providence. In 1896 the factory was removed to Gordon street, into a new building of its own, which is now offered for sale. In 1901 there was merged with the business the Narragansett Webbing Co., of Newport (incorporated January 6, 1897) and the National Fabric Co., of Providence. The Narragansett company was organized by Daniel LeRoy Dresser, who had come into possession of the plant of the E. Read Goodridge Manufacturing Co., of Newport, as a creditor of that concern, and upon the amalgamation with the American Tubing and Webbing Co., he became a large shareholder in the latter, which was capitalized at \$276,000.

The American Tubing and Webbing Co. were understood to be doing a profitable business up to the time of Mr. Dresser's failure, growing out of his connection with the United States Shipbuilding Co. Receivers were appointed in March last, since which time the factory was continued in operation, but on a reduced scale. On November 2 a petition of the receivers for an order of sale was granted by the supreme court, and on November 9 the plant was closed, since which time the officers of the company have devoted their attention to putting the business and property in shape for sale.

GOSHEN RUBBER WORKS (GOSHEN, INDIANA).

AT the recent annual meeting of the shareholders it was voted to increase the capital of the company from \$100,000 to \$200,000, and to add new machinery at once. The year's business was reported to have made a good showing. The board of directors was reelected, with the addition of Frederick Barber, superintendent of the factory. Among the shareholders are several citizens of Indianapolis, including Governor Durbin.

FRANKENBURG'S CANADIAN BRANCH.

As foreshadowed in these pages, the important English house of Frankenburg (Manchester) have established a branch factory in Canada for supplying mackintoshes and raincoats direct to their trade in the Dominion, though at present the proofing of cloth will be done at another Canadian factory. The style of the house in Montreal is Isidor Frankenburg, Sons & Co., Limited, and the location, No. 1883 Notre Dame street. The factory will supply the wholesale trade only. Their Canadian manager is E. L. Rosenthal, who, in 1876, entered upon a seven years' apprenticeship to the Messrs. Frankenburg, in Manchester. Later Mr. Rosenthal became a waterproof manufacturer on his own account in Canada, since which time he has become thoroughly acquainted with the requirements of the trade in that country. —The parent house of Frankenburg dates from 1876. Originally the manufacture of leather goods was combined with that of waterproof goods. More recently this feature has been replaced with electric wires and cables. In 1900 the business was transformed into a limited liability company, I. Frankenburg, Limited, composed of Mr. Isidor Frankenburg, J. P., and his sons, and capitalized at £250,000, in £10 shares, one half preferred and one half ordinary. A branch for the manufac-

ture of waterproofs has been maintained for some time past in Hamburg, Germany.

RUBBER INDUSTRY IN CONNECTICUT.

FIFTEEN rubber factories in Connecticut, large and small, now report to the state bureau of labor statistics, from the latest published annual report of which the following details are compiled, for the two fiscal years (ending November 30) 1901 and 1902. It will be seen that a marked increase is to be noted for each item in the list, showing 1902 to have been a busy and profitable year for the industry:

	1901.	1902.
Factories reporting.....	15	15
Average number employes.....	3754	4374
Average number days employment.....	285.6	296.8
Amount wages paid.....	\$1,766,556.67	\$2,374,290.19
Average yearly earnings.....	\$470.58	\$517.10
Average daily earnings.....	\$1.65	\$1.74
Gross value of products.....	\$10,941,714.59	\$15,955,280.82
Percentage labor in cost.....	16.1	13.6

There is no means of determining just which factories have contributed the above information. In connection with the table it may be of interest to note that the last United States census (for the year ended June 30, 1900) reported 27 rubber factories in Connecticut; average number of persons employed, 7423; total wages for the year, \$3,122,185; average yearly earnings of employes, \$420.61; gross value of products, \$20,245,278.

BOSTON WOVEN HOSE AND RUBBER CO.

THE following financial statement has been filed with the commissioner of corporations of Massachusetts, dated September 1, 1903:

ASSETS.		LIABILITIES.	
Real estate.....	\$ 185,500	Capital.....	\$1,200,000
Machinery.....	264,499	Accounts payable.....	291,500
Merchandise.....	483,751	Surplus.....	34,465
Cash and debts receivable.....	663,764	Profit and Loss surplus.....	71,550
Patent rights.....	1	Total.....	\$1,597,515
Total.....	\$1,597,515		

The merchandise inventory shows an increase over last year of \$3,422 and the cash and receivables an increase of \$137,684. The patent rights account has been reduced from \$10,000, and the real estate and machinery accounts figure at \$115,301 less than last year.

RAINPROOF COATS IN CANADA.

"NEVER in the history of the clothing trade in Canada," says the Montreal *Clothier and Haberdasher*, "was there such a volume of trade done in rainproof garments for men as this fall." It is pointed out that, while the trade became less active with the beginning of winter, Montreal manufacturers are making preparations for a big business for next spring, their representatives already submitting a great variety of clothes to the retail trade. At the same time conditions in the mackintosh trade are reported good.

NEW CATALOGUE OF MARINE MACHINERY.

THE Marine Iron Works (Station A, Chicago, Illinois) have just issued a new illustrated catalogue of their product, that will be sent free on request. This company makes an exclusive specialty of designing and building modern marine machinery (steam only) suitable for vessels ranging from 30 to 160 feet in length, and within their range of sizes the line is very complete, covering paddle wheel as well as screw propeller machinery, condensing or non condensing, for either salt or fresh water, as may be required. The large line of marine boilers which they build includes the Roberts Safety Water Tube, as also the better class of shell marine boilers, and for either hard coal, soft coal or wood fuel as desired. Their new catalogue illustrates

and mentions 35 different sizes and types of screw propeller engines and 36 different paddle wheel engines, all of modern type. Fifty different sizes and types of marine boilers are listed.

FISK RUBBER CO. (CHICOPEE FALLS, MASS.).

THE assignee, A. N. Mayo, has made a statement of the condition of this company on October 15, showing assets of \$232,587.09 and liabilities of \$237,480.96. At last accounts nearly all the creditors had assented to the assignment, and the opinion is expressed that it will be possible, in view of the prospects of the company's business, to pay the claims in full.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Oct. 24	100	10 $\frac{1}{4}$	8 $\frac{1}{2}$	110	36 $\frac{1}{2}$	36 $\frac{1}{2}$
Week ending Oct. 31	310	9 $\frac{3}{8}$	9 $\frac{1}{8}$	—	—	—
Week ending Nov. 7	700	9 $\frac{1}{2}$	9	210	38	38
Week ending Nov. 14	610	8	8	100	36	36
Week ending Nov. 21	430	9	8 $\frac{1}{8}$	260	36 $\frac{1}{2}$	36 $\frac{1}{2}$
Week ending Nov. 28	250	9	9	400	36 $\frac{1}{2}$	35 $\frac{1}{2}$

RANGE FOR TWO YEARS.

	Common.		Preferred.	
1902.....	High 19 $\frac{5}{8}$	Low 14	High 64	Low 49 $\frac{1}{2}$
1903.....	19 $\frac{1}{8}$	7	58	30 $\frac{1}{4}$

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Oct. 24	1,487	14 $\frac{1}{2}$	14	37	67 $\frac{7}{8}$	67 $\frac{1}{2}$
Week ending Oct. 31	1,730	14 $\frac{3}{4}$	14	400	70	68
Week ending Nov. 7	910	14 $\frac{3}{4}$	14	448	68	67 $\frac{1}{2}$
Week ending Nov. 14	930	14	13 $\frac{1}{2}$	550	70	68 $\frac{1}{2}$
Week ending Nov. 21	510	14 $\frac{1}{2}$	13	1,200	70	69
Week ending Nov. 28	200	14 $\frac{1}{8}$	14 $\frac{1}{2}$	365	70	67

RANGE FOR TWO YEARS.

	Common.		Preferred.	
1902.....	High 25 $\frac{1}{8}$	Low 17 $\frac{1}{4}$	High 74	Low 63
1903.....	30	12	84 $\frac{1}{2}$	60

RUBBER GOODS MANUFACTURING CO.

AT a meeting of the directors held in New York on November 25, the nineteenth regular quarterly dividend of 1 $\frac{1}{4}$ per cent. on the preferred shares of the company was declared, payable out of current earnings, on December 15, to holders of record of December 5, 1903. Checks will be mailed to registered addresses.

A NEW RUBBER PROOFING PLANT.

THE Mercury Rubber Co., the incorporation of which was reported in the last INDIA RUBBER WORLD, announce that they have fitted up a plant at Elizabeth, New Jersey, for proofing cloth and the manufacture of rubber specialties, such as hoofs, soles, hoof pads, and mold work generally. The premises are those occupied some years ago by the late Pacific Rubber Co. The factory is in charge of Charles F. Hart, who has had long experience in the trade. The office of the company is at No. 35 Warren street, New York. I. Markowitz is president of the company and Mr. Hart secretary.

NEW INCORPORATIONS.

ROYAL Rubber Works Co., Inc. (Hartford, Connecticut), November 2, 1903, under Connecticut laws; capital, \$4000. Thomas P. Govan, president; Joseph A. Holstein, manager. Wholesale jobbers in rubber goods of all kinds, with hospital supplies a specialty.

=The Western Rubber Co. (Denver, Colorado), September 15, 1903, under Colorado laws; capital, \$50,000. Frank R. Marsh, president; Frank G. Peck (mine owner), vice president; Myron

G. Brownell (publisher *The Colorado Real Estate News*) secretary and treasurer. Premises have been leased at No. 1633 Blake street, Denver, for a factory for extracting rubber from a plant said to grow wild in profusion over great areas in Colorado and adjoining states. The company advise THE INDIA RUBBER WORLD that they have nothing to say for publication as yet, though local newspapers mention that samples of the new rubber have been on exhibition.

[A press despatch from Buena Vista, Colorado, of November 16, says: "The first carload of rubber weed for the Western Rubber company of Denver was shipped this morning. Frank Newitt, the local representative of the Denver concern, reports that 28,000 pounds of rubber root were gathered here last week. Mr. Newitt says that the supply of the weed immediately surrounding Buena Vista could not be gathered by 1000 men in a year's work. Buena Vista is most favorably located as a central point from which to gather the rubber weed, the valley and hills adjoining being literally covered with it."]

=Stewart & Houlihan (New York), November 18, 1903, under New York laws, to manufacture rubber and metal stamps; capital, \$20,000. Directors: G. T. Houlihan, M. A. Stewart, and A. L. Houlihan, all of New York.

TRADE NEWS NOTES.

RELATIVE to a report that The B. F. Goodrich Co. would engage in the making of hard rubber goods, President George T. Perkins, of that company, is quoted by an Akron newspaper as saying: "We use some hard rubber in the manufacture of some of our specialties, but as for establishing a hard rubber department, we have not thought of that. The hard and soft rubber business are as separate as iron and rubber business. We shall continue to buy what hard rubber we need."

=In a letter to Morris & Co. (Yardville, New Jersey), in regard to their spring bottom baskets, the Davol Rubber Co. (Providence, R. I.) wrote recently: "We are using your Duck Baskets for the moving of our product in different states of completion, from one department to another, and find them admirably suited to our purpose."

=Mr. Alexander M. Paull, general manager of the Boston Woven Hose and Rubber Co., lately has made a three weeks' tour of the country, visiting the company's salesmen in all the leading cities. Mr. E. H. Huxley, manager of the Chicago branch, has returned to business after eight weeks' illness.

=The "Alice" mill of the Woonsocket Rubber Co. (Woonsocket, Rhode Island) is reported to have orders in hand for several months ahead, and is being run full time with a full force.

=The Brass Department of the Boston Woven Hose and Rubber Co. have put on the market a cast brass garden hose coupling, packed one dozen in a paper box and one dozen boxes in a wooden case. This is in response to a demand from the jobbers who object to receiving couplings in bulky packages which must be counted over several times. The "Bull Dog" coupling so called, is all the name implies for holding and in neat packages it is doubly attractive.

=Work is fast nearing completion upon the new power plant of the B. F. Sturtevant Co. at Hyde Park, Massachusetts. This bids fair to be one of the most complete plants of its kind in the country, special care having been taken in connection with every detail to secure the highest efficiency and the most modern equipment. The plant will comprise four water tube boilers, with stokers supplied by Sturtevant force draft, an economizer with Sturtevant induced draft, and a complete outfit of Sturtevant generating sets, together with condenser, air compressor, etc. The Sturtevant exhaust head is used for separating the water and oil from the exhaust steam.

=The new rubber shoe factory of Terrence McCarty, at Bristol, Rhode Island, began operation on November 16, with a ticket of 500 pairs per day, which number it is hoped to increase shortly.

=The Grand Rapids Felt Boot Co. (Grand Rapids, Michigan) have renewed for three years their contract with H. B. Meyers, of E. S. Woodbury & Co. (Boston) to act as their New England representative.

=The Consolidated Rubber Tires Co.'s 4 per cent. bonds, which had not been traded in for a long time, sold in New York on November 27 at 10—a gain of 3 points over the previous open sale. Several lots of bonds, amounting to \$13,000, are reported to have been quietly purchased on November 23 and 24, at 10. The stocks were favorably influenced by the advance in bonds, the bid and asked prices being quoted substantially higher, though no trades were reported.

=Shipments are already being made on fruitjar rings for next season's trade. In one week this month two car loads left the factory of the Boston Woven Hose and Rubber Co. When it is considered that a car holds approximately 5,000,000 rings, the question arises, what do people do with so many of them?

=The office of the general secretary-treasurer of the Amalgamated Rubber Workers' Union of America has been removed from Boston to No. 52 Conant street, Concord Junction, Massachusetts.

=The State election in Rhode Island on November 3 resulted in the reelection of Governor Garvin by a majority of 1587 over Colonel Samuel P. Colt, who had accepted the nomination of his party against his wish. Last year Governor Garvin's majority over the Republican nominee was 7738.

=Hammill & Gillespie, Nos. 240-242 Front street, New York, have been appointed selling agents for The Stamford Rubber Supply Co. (Stamford, Connecticut.)

=Recent reports to the effect that suit had been filed by the G & J Tire Co. (Indianapolis, Indiana) against the American representatives of the manufacturers of the "Continental" and Michelin tires, for infringement of their "Clincher" tire patents, appear to be unfounded. As already intimated in THE INDIA RUBBER WORLD, there is a possibility that the two foreign firms, who are undertaking to establish an American trade, may be licensed by the Rubber Goods Manufacturing Co.—who control the G & J Tire Co.—to sell tires in this country involving the clincher principle.

=The common and preferred stocks of the American Bicycle Co. have from the New York Stock Exchange list. The amount of the outstanding shares is now very small, owing to the deposits made under the reorganization plan which resulted in the transfer of the business to the Pope Manufacturing Co. There has been no trading in these shares for some months.

=The factory of the Easthampton Rubber Thread Co. (Easthampton, Massachusetts) has been wired for electric lighting, and the steam power will be increased sufficiently to operate a dynamo.

=The Hon. George W. Crouse, formerly heavily interested in The B. F. Goodrich and Whitman & Barnes rubber companies, has returned from a trip of several months abroad. One of his first acts upon reaching Akron was to apply for a discharge from bankruptcy in the United States district court in Cleveland.

=The suit of Mattie Vanderhoof against the Diamond Rubber Co. has been transferred to the United States circuit court for the northern district of Ohio, at the request of the defendant. Miss Vanderhoof is suing for damages alleged to have been sustained by her in slipping on an icy platform in front of one of the factory buildings.

=George S. Miller has resigned as president, treasurer and general manager of the New England Rubber Shoe Co. (Boston), to take charge of the Chicago house of Edward R. Rice, selling agent for the Joseph Banigan Rubber Co. On the evening of November 16 he gave a dinner to the selling staff of the company at the Boston Yacht Club. Edward B. Swett, who has been assistant to Mr. Miller, has been elected treasurer and general manager of the company. In Chicago Mr. Miller succeeds J. D. McDonald, who on his retirement from the house was presented by the salesmen with a handsome gold headed cane of solid ebony, inscribed "From the Banigan Boys, 1903."

=The annual auction of rubber boots and shoes at Montreal, at the salesrooms of Benning & Barsalou, realized about \$50,000, at prices 10 to 20 per cent. higher than last year.

=Mr. A. H. Marks, of the Diamond Rubber Co. (Akron, Ohio) is in Liverpool, in connection with the business of the Northwestern Rubber Co., Limited, of which he is president.

NEW TRADE PUBLICATIONS.

THE Northwestern Rubber Co., Limited (Liverpool) issue a handsome booklet entitled "Reclaimed Rubber," in which is given in condensed form considerable information regarding rubber reclaiming methods and suggestions for the use of reclaimed rubber in the manufacture of goods. The company control the process patented about six years ago by Mr. A. H. Marks, which consists in treating ground rubber scrap

with a dilute alkali solution at a comparatively high temperature, then washing, drying, and sheeting. A number of illustrations in the pamphlet show the mechanical equipment of the company's works, together with interior views of their offices. The works are described as covering sixteen acres. The directors of the company are Arthur H. Marks (president), William Alexander Smith (vice president and treasurer), W. B. Hardy, O. C. Barber, H. G. Wright, Dr. Joseph Torrey (technical manager), and Ernest E. Buckleton (general manager and secretary), [6"×9½". 16 pages.]

THE GUTTA PERCHA AND RUBBER MANUFACTURING CO. OF TORONTO, LIMITED, issue an illustrated priced catalogue of Yachting, Tennis, Lacrosse, and Vacation Shoes, for the season of 1904, showing an attractive line of goods. [3½"×6½". 12 pages.]

PHIL. PENIN GUMMIWAAREN-FABRIK ACTIENGESellschaft (Leipzig) issue a booklet in connection with their twenty-fifth anniversary, giving details of the growth of their business and views of their former and present factories. [5¼"×8½". 10 pages.]

At a meeting of shareholders of Isidor Frankenburg, Limited, at Manchester, England, on October 26, it was resolved, owing to the sons of the governing director now taking a great interest in the business, and being large shareholders to identify them with the name of the company, and, therefore, to alter the name of the company to I. Frankenburg & Sons, Limited, to date from November 16, 1903. This alteration will not involve any change in the directorate or management of the business.

REVIEW OF THE CRUDE RUBBER MARKET.

THE condition of the market has been one of uncertainty and constant fluctuation since the culmination, two months ago, of the exceptional advance in prices. As is always the case, that sudden rise—to a figure which practically prohibited buying—was followed by an equally sudden decline, though not to the old level. The market has since been in a position of seeking a normal basis. The advance at the beginning of September, under what might be called panicky conditions, of course went for a moment higher than was justified by any conditions of supply and demand. Similarly, the reaction may have carried prices to a point lower than those conditions justified. Whatever the cause of these changes, the effect is to render consumers uncertain as to the best course to pursue, and to unsettle prices of manufactured products and the sale of them.

It is ever easy to revive talk of "speculation" as the cause of market changes. That is a word capable of many applications, since all buying and selling involves speculation. The manufacturer who, fearing a rise in the market, lays in a supply of rubber beyond his current needs, engages in speculation. If rubber should advance, he has an advantage over competitors who postpone buying until actually in need of rubber; if there should be a decline, the advantage will be on the side of the competitors. The crude rubber merchant must take long chances in his business, which is more speculative than many other branches of buying and selling, because of greater risks involved.

But in the sense in which speculative manipulation of the market is usually meant—the securing control of all available stocks and compelling manufacturers to pay exorbitantly for them—it is safe to assert that crude rubber prices are seldom made in this way, and certainly not for any length of time. Stocks of rubber of late have been very low, and the demand

for rubber active, and in the natural order of things high prices would result, just as turkeys cost more at the Thanksgiving season than at times when the demand is less general. Naturally the holders of stocks of rubber at such a time ask more and obtain more than under other circumstances, and it would not be surprising if, somewhere, the asking price should be put unreasonably high, but the fact that with the first new arrivals the prices decline is proof that supplies as a whole are not under control by any single or central influence.

It must be remembered, too, that speculative movements in crude rubber may have for their object "bearing" prices as well as "bulling" them. Different views as to the future of the market are held by different merchants at any given time, one party figuring on a decline and the other on an advance, and making their future plans accordingly. If there was any concerted speculative action, all the merchants would be found on one side of the market. However, every member of the trade is entitled to his own opinion, and that all sides may have a hearing, THE INDIA RUBBER WORLD this month presents on another page a number of interviews with manufacturers and crude rubber merchants, including expressions on other points than whether rubber prices have been controlled of late by manipulation.

The rubber factories are perhaps less busy, now that the end of the year is near. But this does not imply dullness: during most of the year the capacity of the factories had been taxed, so that the production of goods is perhaps normal.

Prices at the close of the month are higher than at the middle, and the present level is materially higher than at this time last year. The market in New York is very firm, corresponding with conditions elsewhere. Receipts of rubber at Pará since the beginning of the crop season, as compared with the same months for the three years preceding, were as follows:

	1900.	1901.	1902.	1903.
July.....tons.	860	1260	1290	1280
August.....	1290	1290	1370	1230
September.....	1280	1940	1670	2010
October.....	2350	2640	2280	2440
November.....	2200	2970	2650	a 2470
Total, Five months.....	7,980	10,100	9,260	9,430
[a To November 26, 1903.]				

Following is a statement of prices of Pará grades, one year ago, one month ago, and on November 30—the current date:

PARA.	Dec. 1, '02.	Nov. 1, '03.	Nov. 30.
Islands, fine, new.....	73@74	97@98	92@93
Islands, fine, old.....	@	@	@
Upriver, fine, new.....	79@80	102@103	95@96
Upriver, fine, old.....	84@85	104@105	97@98
Islands, coarse, new.....	49@50	57@58	55@56
Islands, coarse, old.....	@	@	@
Upriver, coarse, new.....	65@66	82@83	79@80
Upriver, coarse, old.....	@	@	@
Caucho (Peruvian) sheet.....	55@56	63@64	60@61
Caucho (Peruvian) ball.....	63@64	72@73	71@72

The market for other sorts in New York on which prices have been better maintained, as a rule is as follows:

AFRICAN.	Ikelemba.....	None here
Sierra Leone, 1st quality.....	85 @86	Madagascar, pinky.....80 @81
Massai, red.....	85 @86	CENTRALS.
Benguella.....	69 @70	Esmeralda, sausage.....70 (a 71
Cameroon ball.....	62 @63	Guayaquil, strip.....59 @60
Gaboon flake.....	@	Nicaragua, scrap.....69 @70
Gaboon lump.....	46 @47	Panama, slab.....52 @53
Niger paste.....	@	Mexican, scrap.....69 @70
Accra flake.....	31 @32	Mexican, siab.....50 @51
Accra buttons.....	None here	Mangabeira, sheet.....55 @56
Accra strips.....	None here	EAST INDIAN.
Lopori ball, prime.....	84 @85	Assam.....78 @79
Lopori strip, do.....	77 @78	Borneo.....@

Late Pará cables quote:

	Per Kilo.	Upriver, fine.....	Per Kilo.
Islands, fine.....	5\$600	Upriver, coarse.....	4\$900
Islands, coarse.....	2\$600		
Exchange, 12½d.			

Last Manáos advices (November 28):

Upriver, fine.....	5\$400/4\$300	Upriver, coarse.....	4\$300
Exchange, 12½d.			

NEW YORK RUBBER PRICES FOR OCTOBER (NEW RUBBER).

	1903.	1902.	1901.
Upriver, fine.....	1.00@1.09	74@79	84@90
Upriver, coarse.....	82@91	60@64	63@66
Islands, fine.....	96@1.06	72@74	78@85
Islands, coarse.....	56@68	46@49	46@48
Cametá, coarse.....	56@67	47@49	48@49

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.		Total	Total	Total
	Fine and Medium.	Coarse.	1903.	1902.	1901.
Stocks, September 30.....tons	88	9 =	97	198	523
Arrivals, October.....	535	333 =	868	893	500
Aggregating.....	623	342 =	965	1091	1023
Deliveries, October.....	548	335 =	883	917	537
Stocks, October 31....	75	7 =	82	174	486

	PARÁ.		ENGLAND.		
	1903.	1901.	1903.	1902.	1901.
Stocks, Sept. 30...tons	240	86	240	1275	980
Arrivals, October....	2381	2300	1850	995	800
Aggregating.....	2621	2386	2040	1235	2075
Deliveries, October...	2276	2241	1790	800	825
Stocks, Oct. 31....	345	145	250	435	1250

	1903.	1902.	1901.
World's visible supply, October 31.....tons	2372	3038	2797
Pará receipts, July 1 to October 31.....	6400	6179	6682
Pará receipts of Caucho, same dates.....	1484	431	448
Afloat from Pará to United States, Oct. 31...	700	554	408
Afloat from Pará to Europe, October 31.....	810	915	628

In regard to the financial situation, Albert B. Beers, (broker in India-rubber, No. 58 William street, New York), advises us as follows:

"During November the money market has ruled very firm for all classes of loans, with very little demand for commercial paper, even from out-of-town banks, rates being nominally 6@7½ per cent. according to grade."

Ceylon Rubber Exports.

OFFICIAL statement of shipments of cultivated rubber for the first ten months of 1903:

To Great Britain.....	pounds	30,009
To Belgium.....		156
To Germany.....		1,672
To United States.....		400

Total, ten months.....	32,237
Total, 12 months, 1902.....	21,168
Total, 12 months, 1901.....	7,392

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The results of the rubber sale of October 23 were very satisfactory, the estimations based on the September sale being fully maintained, and in some cases prices exceeding estimations by 1 per cent. Of 454 tons exposed, 433 found buyers. At the next monthly sale, on November 18, about 502 tons will be offered, some of the larger lots, with their estimations, being:

78 tons Uelé.....	francs	9 75
63 " Aruwimi.....		9.90
53 " Lopori I.....		9.90
41 " Lopori II.....		8.50
26 " Mongalla.....		9.90
23 " Upper Congo.....		10 17½
15 " Equateur I.....		10.35
12 " Equateur II.....		10.

C. SCHMID & CO.

Antwerp, November 12, 1903.

[REPORTS received at New York indicate that the results obtained at the above sale were very irregular, some lots of the highest grades bringing relatively less than lower grades. There was an average decline from valuations of about 75 centimes per kilogram, or 5½ to 6 cents per pound. This decline, however, was less than, in some quarters, had been anticipated, with the result that the Antwerp sale had an influence in rendering markets elsewhere more firm.]

RUBBER ARRIVALS AT ANTWERP.

(OCT. 28.—By the *Albertville*, from the Congo:

Bunge & Co.....	(Société Isangi) kilos	2,000
Do.....	(Chemins de fer des Grand Lacs)	15,300
Do.....	(Société Générale Africaine)	107,000
Do.....	(Société Anversoise)	37,000
Société A B I R.....		137,000
Comptoir Commercial Congolais.....		7,000
Société Equatoriale Congolaise.....		5,800
L. & W. Van de Velde.....	(Cie. du Kasai)	85,000
Société Coloniale Anversoise.....	(Belge du Haut Congo)	23,000
Do.....	(Cie. de Lomami)	500
Charles Dethier.....	(Société Belgika)	1,250
Cie. Commerciale des Colonies.....		350
		422,100

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for carload lots—in cents per pound; again no change of importance to be noted:

Old Rubber Boots and Shoes—Domestic.....	6½ @ 7
Do.....—Foreign.....	6¼ @ 6½
Pneumatic Bicycle Tires.....	4 @ 4½
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	8¾ @ 9
Heavy Black Rubber.....	4¼
Air Brake Hose.....	2½ @ 2¾
Fire and Large Hose.....	2
Garden Hose.....	1½
Matting.....	1

RUBBER ARRIVALS AT ANTWERP.

Nov. 16.—By the *Anversville*, from the Congo :

Bunge & Co	(Société Générale Africaine) kilos	187,000	
Do	(Chemins de fer des Grand Lacs)	17,000	
Do	(Société Anversoise)	20,000	
Do	(Société Isanghi)	4,000	
Do	(Cie. du Kasai)	44,000	
Société A B I R		41,000	
Société Coloniale Anversoise (Belge du Haut Congo)		20,000	
Do	(Société La Lulonga)	17,000	
Charles Dethier	(La Haut Sangha)	7,000	
Cie. Commerciale des Colonies		400	
Comptoir des Produits Coloniaux		4,000	
Do		600	
Do	(Cie. de la N'Goko)	8,000	
Th. De Bruyne	(Cie. du Kouango)	7,000	
Evrard Havenith	(Société Andrea)	1,000	378,000

Liverpool.

WILLIAM WRIGHT & Co. report [November 2]:

Fine Pará.—The market, generally, has had a downward tendency. In the early part of the month spot prices for Upriver were forced down from 4s. 7½d. to 4s. 3½d.; then a sharp reaction of 4s. 5½d. followed by an equally sharp decline to 4s. 2½d.—a drop during the month of 5d. per pound. Manufacturers, generally, have held aloof, watching the manipulation of "bear operators" who advanced or depressed prices 1d. to 2d. per pound a day, by simply frightening second hand operators. The statistical position is still sound, with no superabundance of raw material, but naturally one cannot expect in face of the heavy receipts due next year for prices to remain at their late high level, but the extraordinary sudden fluctuations of this month simply disorganize trade, and the sooner a proper level of prices is reached the better.

EDMUND SCHLÜTER & Co. report Liverpool stocks:

	Sept. 30.	Oct. 31.		Sept. 30.	Oct. 31.
Pará—1st hands..	82	271 tons.	Peruvians.....	31	51 tons.
Fine.....	43	179 "	Africans.....	217	235 "
Medium.....	19	29 "	Mollendo.....	420	323 pkg.
Negroheads.....	29	63 "	Mangabeira.....	122	70 "
Pará—2d hands..	161	164 "	Pernambuco.....	111	110 "
Fine.....	131	126 "	Maniçoba.....	1023	1626 "
Medium.....	9	9 "	Ceará.....	174	349 "
Negroheads.....	21	29 "	Assare.....	152	122 "
Total Pará.....	243	435 "			

London.

EDWARD TILL & Co. [November 1] report stocks:

	1903.	1902.	1901.
LONDON { Pará sorts..... tons	—	—	—
{ Borneo.....	20	115	137
{ Assam and Rangoon.....	4	4	77
{ Other sorts.....	199	319	477
Total.....	223	438	691
LIVERPOOL { Pará.....	435	1237	876
{ Other sorts.....	527	662	1035
Total, United Kingdom.....	1185	2337	2602
Total, October 1.....	866	2464	2802
Total, September 1.....	1364	2731	2736
Total, August 1.....	1781	3053	2944
Total, July 1.....	2285	3595	3128
Total, June 1.....	2248	3687	3502
Total, May 1.....	2539	3788	3597

PRICES PAID DURING OCTOBER.

	1903.	1902.	1901.
Pará fine, hard..	4/ 2½@4/8	3/1¼@3/3¼	3/4½@3/6½
Do soft.....	4/ 0½@4/7½	3/0½@3/1½	3/6½@3/7¾
Negroheads, scrappy..	3/ 5½@3/8	2/7 @2/8½	2/8
Do Islands.....	2/ 6 @2/8	2/7 @2/8½	No sales.
Bolivian.....	No sales.	3/3 @3/4	3/7 @3/8

NOVEMBER 13.—The market for Pará sorts has shown increased weakness, with a decline during the past week of 1½d. to 2d. per pound. Considerable business has been done at 3s. 10d. for soft cure Fine for spot and near delivery, and hard cure Fine at 3s. 11d. Hard Entrefine sold down to 3s. 9d. Small sales of scrappy Negroheads forward at 3s. 3½d., and Cametás down to 2s. 3¾d. Peruvians quiet; ball sold at 3s. 3½d. for forward delivery; slab quoted at 2s. 6½d., and fine at 3s. 10½d. Medium grades [Africans and Centrals], in sympathy with

Parás, are rather easier and in good demand. At to-day's auctions all desirable lots found buyers at about steady rates. Colombian fair to good white scrap and sheet at 2s. 9d.@3s.; white scrap softish 2s. 8d.@2s. 8¾d. Ecuador scrap and brown ball 3s. 0½d. Madagascar: Fair Majunga 2s. 4¾d.; fair to good dark coated 2s. 2d.@2s. 3d. Mozambique: Good clean stickless sausage, 3s. 6½d.; fair to good Beira ball and sausage, 3s. 5d.@3s. 5½d.; fair to good Lamu ball 3s. 1½d.@3s. 2¼d. Nyassa small red ball slightly heated 3s. 3¼d. Borneo mixed part fair and inferior 1s. 10d.@1s. 10½d.

Latex.—Sixty seven bales Block sold, mixed at 1s. 7½d.@1s. 8d.; loaded inferior at 1s. 2d.

Rubber Receipts at Manaus.

DURING October and the first four months of the crop season for three years [courtesy of Messrs. Witt & Co.] :

FROM—	OCTOBER.			JULY-OCTOBER.		
	1903.	1902.	1901.	1903.	1902.	1901.
Rio Purús..... tons	215	431	494	1101	1199	1374
Rio Madeira.....	254	160	470	1009	894	1064
Rio Juruá.....	158	38	277	414	269	581
Rio Javary—Iquitos.....	581	153	320	766	308	475
Rio Solimões.....	99	282	247	183	445	504
Rio Negro.....	2	4	1	17	69	17
Total.....	1309	1068	1809	3490	3184	4015
Caucho.....	87	62	123	428	321	514
Total.....	1396	1130	1932	3918	3505	4529

Bordeaux.

R. HENRY favors THE INDIA RUBBER WORLD with details of arrivals of rubber for 1903 which permit the record to be brought down to November 1, as follows [weights in kilograms]:

GRADES.	Jan.-June.	Jul.-Sept.	Oct.	Total.
Soudan twists.				
Soudan niggers.				
Conakry niggers.				
Gambia.....	77,000	9,400	—	86,400
Bassam.....	25,500	2,550	2,000	30,050
Lahou.....	—	2,466	—	2,466
Madagascar.....	—	2,100	—	2,100
Java.....	—	1,500	—	1,500
Congo sorts.....	18,000	18,000	6,000	42,000
Mexican.....	1,500	—	—	1,500
Other sorts.....	600	—	—	600
Totals.....	478,800	302,716	72,500	854,016

Total arrivals for the whole of 1902 were 678,400 kilos and in the preceding year only 235,380 kilos. The figure for 1900 was 239,522 kilos and for 1899 only 175,589.

PRICES NOVEMBER 17 IN FRANCS PER KILOGRAM.

Sierra Leone sorts:	Bassam lumps.....	5.	@	6.
Niggers, red I..	9.50@10.10	Gold Coast.....	6.	@ 6.10
Niggers, black, I..	9.10@ 9.50	Madagascar sorts:		
Niggers, II, III.	6.50@ 8.50	Majunga.....	5.75@	7 25
Twists, fine ..	9.30@ 9.40	Tamatave.....	7.	@ 8.50
Twists, ordinary	8.75@ 9.	Niggers.....	4.50@	7.50
Cassamance.....	4.10@ 8.10	Mexican scrap.	8.	@ 9.

[10 Francs per Kilo=87½ cents per Pound.]

Gutta-Percha.

WEISE & Co. (Rotterdam) report exports from Singapore for the first nine months of five years past as follows:

Tons	1899.	1900.	1901.	1902.	1903.
	5650	4753	4538	3283	2603

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

October 31.—By the steamer <i>Nederlander</i> , from La Guayra:	IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total
Middleton & Co.,	5,300	.....	.....	.....	.....	5,300

November 4.—By the steamer <i>Cearense</i> , from Manáos and Pará:	United States Rubber Co.	218,800	40,000	65,600	700=	325,100
	New York Commercial Co.	126,000	35,400	40,600	300=	202,300

Poel & Arnold.....	84,000	13,300	19,200	...=	116,500
A. T. Morse & Co.....	26,200	5,600	77,900	300=	110,000
Lionel Hagenars & Co..	44,100	17,800	9,600	...=	71,500
William Wright & Co....	12,700	3,200	39,100	.....=	55,000
Hagemeyer & Brunn....	7,100	1,000	900	.....=	9,000

Total... 518,900 116,300 252,900 1,300= 889,400

November 10.—By the steamer *Dunstan*, from Manáos and Pará:

A. T. Morse & Co.....	112,000	13,100	72,100	.....=	197,200
Poel & Arnold.....	113,000	15,400	30,700	4,300=	163,400
United States Rubber Co.	34,600	5,500	54,100	2,700=	96,900
New York Commercial Co.	45,300	5,900	19,100	300=	70,600
Lionel Hagenars & Co..	13,000	.....	2,000	.....=	15,000
William Wright & Co....	4,700	1,400	8,100	.....=	14,200
Hagemeyer & Brunn....	7,000	1,000	1,000	.....=	9,000
Thomsen & Co.....	4,700	300	1,900	.....=	6,900

Total..... 334,300 42,600 189,000 7,300= 573,200

PARA RUBBER VIA EUROPE.

NONE REPORTED.

OTHER ARRIVALS AT NEW YORK

CENTRALS.

POUNDS.

OCT. 26.—By the *Havana*=Mexico:

Harburger & Stack.....	1,000	
Samuels & Cummings.....	1,000	
E. N. Tibbals & Co.....	300	
H. Marquardt & Co.....	200	
E. Steiger & Co.....	300	2,800

OCT. 27.—By the *Segurana*=Colon:

Hirzel, Feltman & Co.....	18,500	
Lawrence Johnson & Co.....	10,400	
Isaac Brandon & Bros.....	5,800	
A. Santos & Co.....	2,400	
Piza Nephews & Co.....	3,700	
Ridanque Bros. & Co.....	3,000	
G. Amsinck & Co.....	2,900	
American Trading Co.....	1,900	
Dumarest & Co.....	1,800	
Meyer Hecht.....	1,800	
Jimenez & Escobar.....	1,200	
J. Menendez & Co.....	700	
Roldan & Van Sickle.....	700	
J. A. Pauli & Co.....	400	
Eggers & Heinlein.....	500	
For Antwerp.....	4,800	61,600

OCT. 29.—By the *Soldier Prince*=Antwerp:

J. H. Rossbach & Bros.....	25,000	
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OCT. 28.—By the *Alene*=Cartagena, etc.:

J. Ferro.....	2,500	
Kunhardt & Co.....	1,200	
Jimenez & Escobar.....	1,000	
Isaac Brandon & Bros.....	500	
G. Amsinck & Co.....	1,500	6,700

OCT. 30.—By *El Norte*=New Orleans:

Manhattan Rubber Mfg. Co.....	3,000	
A. T. Morse & Co.....	3,500	
A. N. Rotholz.....	2,500	9,000

Nov. 2.—By the *Etruria*=Liverpool:

A. T. Morse & Co.....	6,000	
Robinson & Tallman.....	4,500	10,500

Nov. 4.—By the *Albanca*=Colon:

G. Amsinck & Co.....	5,200	
Livingstone & Co.....	2,200	
Meyer Hecht.....	2,000	
H. Marquardt & Co.....	1,600	
L. N. Chemedlin & Co.....	1,500	
Eggers & Heinlein.....	1,100	
Isaac Brandon & Bros.....	800	
Smithers, Nordenholt & Co.....	700	
E. Schefflin & Co.....	600	
A. N. Rotholz.....	400	
Harburger & Stack.....	300	
R. G. Barthold.....	200	
Silva, Bussenius & Co.....	200	16,800

Nov. 4.—By the *Valencia*=Greytown, etc.:

E. B. Strout.....	7,500	
G. Amsinck & Co.....	4,000	
Livingstone & Co.....	3,500	
Andreas & Co.....	2,000	
Graham, Hinkley & Co.....	1,100	
Isaac Brandon & Bros.....	500	
A. D. Straus & Co.....	200	
Kunhardt & Co.....	100	18,900

Nov. 7.—By *El Dia*=New Orleans:

A. T. Morse & Co.....	7,500	
Manhattan Rubber Mfg. Co.....	1,000	
Eggers & Heinlein.....	1,000	9,500

Nov. 10.—By the *Aitai*=Cartagena:

Isaac Kube & Co.....	4,500	
D. A. DeLima & Co.....	1,000	
J. H. Recknagel & Co.....	1,000	6,500

November 17.—By the steamer *City of Washington*, from Mollendo (via Colon):

New York Commercial Co.	14,000				14,000
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November 24.—By the steamer *Hubert*, from Manáos and Pará:

United States Rubber Co.	273,800	41,600	62,300=	377,700
A. T. Morse & Co.....	113,200	17,600	199,600	7 800=	338,200
New York Commercial Co.	100,900	21,600	93,800	400=	216,700
Poel & Arnold.....	82,400	19,500	47,900	500=	150,300
William Wright & Co....	12,000	700	10,700	.....=	23,400
Lionel Hagenars & Co..	12,200	.....*	1,400	.....=	13,600
Lawrence Johnson & Co..	9 600	1,000	.....	.....=	10,600
Hagemeyer & Brunn....	5,800	2,300	900	.....=	9,000
Thomsen & Co.....	4,700	500	1,400	.....=	6,600

Total 614,600 104,800 418,000 8,700= 1,146,100

[NOTE. The steamer *Amazonense*, from Pará, is due at New York about December 3, with 75 tons of Rubber and no Caucho.]

CENTRALS—Continued.

Nov. 10.—By the *Niagara*=Mexico:

George A. Alden & Co.....	9,000	
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Nov. 10.—By the *Yucatan*=Colon:

Hirzel, Feltman & Co.....	34,500	
G. Amsinck & Co.....	15,400	
Lawrence Johnson & Co.....	11,800	
Roldan & Van Sickle.....	9,700	
A. Santos & Co.....	6,600	
American Trading Co.....	4,000	
Ascendo & Cassio.....	1,400	
Dumarest & Co.....	1,100	
Meyer Hecht.....	1,200	
Piza Nephews & Co.....	900	
Eggers & Heinlein.....	800	
Meeke & Co.....	700	
E. Steiger & Co.....	500	
H. Marquardt & Co.....	700	
W. Lutz & Co.....	200	
D. N. Carrington & Co.....	100	89,200

Nov. 14.—By the *Esperanza*=Mexico:

F. Probst & Co.....	2,500	
H. Marquardt & Co.....	2,000	
Thebaud Brothers.....	1,500	
Harburger & Stack.....	500	
American Trading Co.....	200	
L. N. Chemedlin & Co.....	300	7,000

Nov. 14.—By the *Cumeous*=Bahia:

J. H. Rossbach & Bros.....	30,000	
Hirsch & Kaiser.....	19,000	49,000

Nov. 17.—By *Alleghany*=Greytown, etc.:

G. Amsinck & Co.....	7,500	
E. B. Strout.....	3,500	
Isaac Brandon & Bros.....	4,000	
D. A. DeLima & Co.....	3,500	
Roldan & Van Sickle.....	1,500	
J. Ferro.....	1,000	
Kunhardt & Co.....	500	21,500

Nov. 17.—By the *City of Washington*=Colon:

G. Amsinck & Co.....	5,000	
Livingstone & Co.....	2,200	
Smithers, Nordenholt & Co.....	3,400	
Meyer Hecht.....	2,000	
D. A. DeLima & Co.....	800	
Andreas & Co.....	700	
Silva, Bussenius & Co.....	500	
Eggers & Heinlein.....	300	14,900

Nov. 21.—By *Havana*=Mexico:

H. Marquardt & Co.....	5,000	
E. Steiger & Co.....	500	
Thebaud Bros.....	500	
E. N. Tibbals & Co.....	600	6,600

Nov. 21.—By the *Tennyson*=Bahia:

J. H. Rossbach & Bros.....	30,000	
Amerman & Patterson.....	6,000	36,000

AFRICANS.

OCT. 30.—By the *Cedric*=Liverpool:

George A. Alden & Co.....	9,000	
Rubber Trading Co.....	6,000	15,000

Nov. 2.—By the *Philadelphia*=London:

Henry A. Gould.....	8,500	
George A. Alden & Co.....	7,000	15,500

Nov. 2.—By the *Etruria*=Liverpool:

A. T. Morse & Co.....	15,000	
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Nov. 2.—By the *Belgravia*=Hamburg:

A. T. Morse & Co.....	13,000	
Rubber Trading Co.....	5,000	18,000

Nov. 5.—By the *Peninsular*=Lisbon:

United States Rubber Co.....	125,000	
Rubber Trading Co.....	11,000	136,000

AFRICANS—Continued.

Nov. 7.—By the *Campania*=Liverpool:

A. T. Morse & Co.....	7,500	
Robinson & Tallman.....	4,500	
William Wright & Co.....	3,500	15,500

Nov. 7.—By the *St. Louis*=London:

George A. Alden & Co.....	11,500	
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Nov. 10.—By the *Utrecht*=Antwerp:

Poel & Arnold.....	495,000	
A. T. Morse & Co.....	40,000	535,000

Nov. 11.—By the *Oceanic*=Liverpool:

Gorge A. Alden & Co.....	37,000	
A. T. Morse & Co.....	20,000	
United States Rubber Co.....	12,000	
Poel & Arnold.....	8,000	77,000

Nov. 12.—By the *Pennsylvania*=Hamburg:

George A. Alden & Co.....	4,000	
Rubber Trading Co.....	3,500	7,500

Nov. 16.—By *Umbria*=Liverpool:

Henry A. Gould Co.....	13,500	
George A. Alden & Co.....	6,000	
A. T. Morse & Co.....	4,500	24,500

Nov. 16.—By the *Cyprus*=Liverpool:

George A. Alden & Co.....	22,500	
Rubber Trading Co.....	5,000	27,500

Nov. 17.—By the *Kronland*=Antwerp:

George A. Alden & Co.....	56,000	
United States Rubber Co.....	15,000	71,000

Nov. 19.—By the *Teutonic*=Liverpool:

A. T. Morse & Co.....	11,000	
Poel & Arnold.....	3,500	
Rubber Trading Co.....	4,500	19,000

Nov. 20.—By the *Patricie*=Hamburg:

Robinson & Tallman.....	22,000	
George A. Alden & Co.....	16,500	
Poel & Arnold.....	13,000	
Rubber Trading Co.....	7,500	59,000

Nov. 21.—By the *Lucania*=Liverpool:

United States Rubber Co.....	28,000	
A. T. Morse & Co.....	6,500	
Poel & Arnold.....	3,500	
William Wright & Co.....	5,000	43,000

EAST INDIAN.

POUNDS.

OCT. 26.—By the *Indrawadis*=Singapore:

Robert Branss & Co.....	22,500	
Rubber Trading Co.....	27,500	50,000

Nov. 10.—By the *Baron Dreisen*=Singapore:

William Wright & Co.....	27,000	
Rubber Trading Co.....	8,500	35,500

Nov. 14.—By the *Breuer*=Singapore:

Robert Branss & Co.....	20,000	
William Wright & Co.....	17,000	37,000

Nov. 16.—*Minneapolis*=London:

George A. Alden & Co.....	17,000	
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PONTIANAK.

OCT. 26.—By the *Indianapolis*=Singapore:

Robert Branss & Co.....	325,000	
Poel & Arnold.....	285,000	
W. R. Russell & Co.....	100,000	710,000

OCT. 26.—By the *Arabic*=Singapore:

Robert Branss & Co.....	130,000	
Rubber Trading Co.....	15,000	145,000

Nov. 10.—By the *Baron Driesen*=Singapore:
 William Wright & Co. 500,000
 Rubber Trading Co. 55,000
 W. R. Russell & Co. 55,000
 Poel & Arnold 53,000 723,000

Nov. 14.—By the *Brauner*=Singapore:
 Robert Brans & Co. 650,000
 William Wright & Co. 210,000
 Haebler & Co. 110,000
 Poel & Arnold 50,000 1,020,000

GUTTA-PERCHA AND BALATA.

Nov. 10.—By the *Baron Driesen*=Singapore:
 Poel & Arnold 5,000

Nov. 20.—By the *Patricia*=Hamburg:
 To Order 6,500

BALATA.

Oct. 26.—By the *New York*=London:
 Earle Brothers 3,500

Nov. 7.—By the *Maracas*=Trinidad:
 Frame & Co. 2,500
 Cadenas & Co. 1,000
 Middleton & Co. 1,000 4,500

Nov. 16.—By the *Minneapolis*=London:
 Earle Brothers 4,500
 George A. Alden & Co. 1,500 6,000

Nov. 20.—By the *Patricia*=Hamburg:
 To Order 1,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—OCTOBER.

	POUNDS.	VALUE.
Imports:		
India-rubber	3,487,947	\$2,508,779
Gutta-percha	25,764	13,082
Gutta-jelutong (Pontianak) ..	2,697,614	67,821
Total	6,211,355	\$2,589,082
Exports:		
India-rubber	237,084	\$170,204
Reclaimed rubber	85,841	11,076

Rubber Scrap Imported 2,360,129 \$120,913

BOSTON ARRIVALS.

POUNDS.

Oct. 5.—By the *Mayflower*=Liverpool:
 George A. Alden & Co.—African ... 3,379

Oct. 6.—By the *Kingston*=Antwerp:
 George A. Alden & Co.—African 15,625

Oct. 6.—By the *Columbian*=London:
 George A. Alden & Co.—East India ... 27,330

Oct. 13.—By the *Cambrian*=London:
 George A. Alden—Gutta-percha 5,374

Oct. 24.—By the *Sylvania*=Liverpool:
 George A. Alden & Co.—African 4,065

Oct. 27.—By the *Devonian*=Liverpool:
 George A. Alden & Co.—African 1,052

Total 56,825
 [Value, \$39,766.]

OCTOBER EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Frank da Costa & Co.	52,142	5,446	114,896	1,500	173,984	111,328	5,874	39,816	—	157,018	331,002
Cmok, Schrader & Co.	37,400	4,080	40,600	—	82,080	155,380	12,410	72,020	7,800	247,610	329,690
Adelbert H. Alden.	48,910	10,780	21,860	312	81,862	79,660	8,185	47,330	1,700	136,875	218,737
Neale & Staats.	—	—	97,328	—	97,328	64,008	5,544	4,108	—	73,660	170,988
J. Marques & Co.	14,906	1,177	3,529	—	19,612	32,044	2,241	12,381	—	46,666	66,278
R. Suarez & Co.	—	—	—	—	—	32,211	10,248	5,634	—	48,093	48,093
Denis Crouan & Co.	9,118	830	10,700	—	20,648	16,326	669	10,442	—	27,437	48,085
Singlehurst Brocklehurst & Co.	—	—	—	—	—	19,854	1,430	8,736	—	30,020	30,020
Kanthack & Co.	17,406	4,820	7,292	—	29,518	—	—	—	—	—	29,518
Pires, Teixeira & Co.	20,424	—	3,887	—	24,311	—	—	—	—	—	24,311
A. F. Vellozo & Co.	—	—	—	—	—	—	692	262	—	954	954
Direct from Manãos.	333,040	67,830	69,529	12,427	482,826	393,561	85,296	61,721	35,280	575,858	1,058,684
Total for October.	533,346	94,963	369,621	14,239	1,012,169	904,372	132,589	262,450	44,780	1,344,191	2,356,360
Total for January-Sept.	4,982,446	1,200,360	3,628,855	1,076,026	10,887,687	6,100,680	793,517	1,802,095	2,666,976	11,363,268	22,250,955
TOTAL SINCE JANUARY 1.	5,515,792	1,295,323	3,998,476	1,090,265	11,840,856	7,005,052	926,106	2,064,545	2,711,756	12,707,459	24,607,315

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
September, 1903.	4,243,279	598,381	3,644,898	September, 1903.	4,158,896	3,472,560	686,336
January-August.	38,655,119	1,984,816	36,670,303	January-August.	35,090,272	25,428,032	9,662,240
Nine months, 1903.	42,848,398	2,583,197	40,315,201	Nine months, 1903.	39,249,168	28,900,592	10,348,576
Nine months, 1902.	37,610,569	2,537,333	35,073,236	Nine months, 1902.	34,992,496	23,040,192	11,952,304
Nine months, 1901.	40,481,640	2,919,422	37,561,618	Nine months, 1901.	39,174,960	24,182,480	14,992,480

GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
September, 1903.	2,379,080	1,104,620	1,274,460	September, 1903.	42,020	22,660	19,360
January-August.	23,468,940	7,768,420	15,700,520	January-August.	1,075,800	100,760	975,040
Nine months, 1903.	25,848,020	8,873,040	16,974,980	Nine months, 1903.	1,117,820	123,420	994,400
Nine months, 1902.	24,828,100	10,200,960	14,627,140	Nine months, 1902.	1,046,540	82,580	963,960
Nine months, 1901.	21,246,060	7,645,820	13,550,240	Nine months, 1901.	1,122,220	165,440	956,780

FRANCE *				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
September, 1903.	1,015,740	708,400	307,340	September, 1903.	152,680	3,300	149,380
January-August.	10,738,420	6,118,200	4,620,220	January-August.	1,984,400	17,160	1,967,240
Nine months, 1903.	11,754,160	6,826,600	4,927,560	Nine months, 1903.	2,137,080	20,460	2,116,620
Nine months, 1902.	12,490,940	7,109,960	5,380,980	Nine months, 1902.	1,997,380	11,220	1,986,160
Nine months, 1901.	12,116,060	7,713,420	4,402,240	Nine months, 1901.	1,926,760	25,080	1,901,680

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

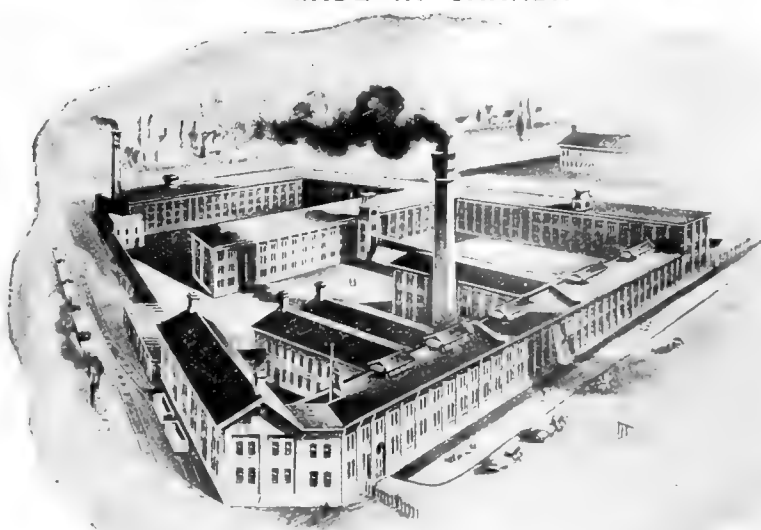
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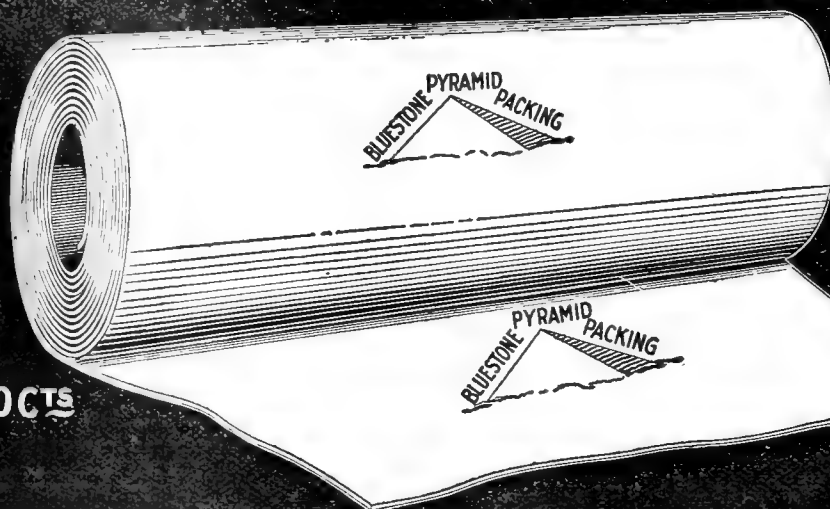
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CONDITION OF THE RUBBER TRADE.

THE year just closed witnessed a larger factory consumption of India-rubber in the United States than any former year, notwithstanding a generally upward tendency of prices of all the raw materials used in the industry. In consequence of the latter fact, the net result of the year's trading has been a somewhat higher level of prices at the factory. It is evident, therefore, that the legitimate demand for products of the rubber factory is growing—that an increasing number of such articles is becoming regarded as necessities by an increasing number of people. It is evident, too, that the purchasing power of the people is being steadily maintained, if not increased, for the exports of rubber goods from the United States probably do not yet exceed 3 per cent. in value of the total products of the industry, and we are still importers of rubber goods.

It has not yet been claimed for the rubber industry, as for iron, that it is a barometer of general business conditions; it is not relatively large enough. But the well sustained demand for rubber goods for the past year cannot be regarded otherwise than as an indication of general prosperity. During the year indications of another sort have not been lacking, but it is worth nothing that those proceeded mainly from the stock exchanges, where some heavily "watered" stocks sold at a startling discount. Such declines as this, however, do not lessen the nation's wealth by one cent. They may lessen the buying capacity of this or that individual or group or class, but not of the people as a whole. Regardless of stock exchange returns, there is little doubt that during the year more people have been at work in this country than ever before, for returns as liberal in any former year, with the result that more people own their homes or have bank accounts, or have a surplus in some form. The buying of goods of every class has been liberal, and the rubber goods manufacturer has had his share in filling the general demand.

The only note of complaint to be heard in the rubber branch is that the trade of late has not afforded profits commensurate with its volume. Buying raw materials at higher prices calls for a larger investment of capital for a given output of goods, and without a corresponding advance in selling prices the manufacturer may not feel as cheerful as he might otherwise over an active condition of trade. But in an era when the prices of so many manufactured products are tending downward, people very naturally object to paying higher than the customary prices for rubber articles of everyday use, no matter for what reason an advance is asked. So while more people than ever want rubber footwear, or garden hose, or rubber belting, or what not, their demands swelling the total production of such goods, they do not want to pay more than such things cost a year ago, and part of the additional cost of production comes out of the manufacturer's profits.

At the same time, when there is a pressure to buy, as has happened during the year in some lines, the effect upon prices is more favorable, from the manufacturers' standpoint, than if it were a pressure to sell. Hence, by and large, the trade of the year, if there could be a general

showing of hands, without doubt would be voted "good," and most of those engaged in it would be content to do as well another year. Furthermore, not a few manufacturers are known to entertain the firm belief that 1904 will not suffer by comparison with 1903, so far as the rubber trade is concerned.

In printing, on another page, some expressions by representative rubber manufacturers, the views of leaders in the mechanical goods trade have been sought, on account of the great extent of this branch, and the great diversity of its products. As for the rubber boot and shoe trade, the factories have been exceptionally busy, and their product promptly distributed, but without heavier snowfalls before the end of the season dealers may find themselves with larger stocks than last year. In regard to various lines of specialties, some of the old time makers look with disfavor upon large manufacturers in other lines who take up such goods as side lines, thereby upsetting established trade conditions. Still, in every branch, the factories have kept busy, and there appears no sign of approaching inactivity. Everybody cannot make tires, of course, but the year's demand for tires promises to be so large as to keep some concerns out of the general competition, thereby giving the other concerns a freer field.

While the above remarks apply especially to the industry in the United States, the same conditions in a large measure exist in the leading rubber manufacturing countries. The world used an exceptional amount of rubber in 1903, due to the fact that more people than ever wanted rubber goods; raw materials were higher everywhere alike, and smaller profits than usual sometimes resulted. There have been no important failures in the trade. Those which have occurred in the United States cannot all be set down to poor trade conditions, and doubtless a similar assertion may be made regarding the industry abroad.

THE CONTROL OF RUBBER PRICES.

IN discussing crude rubber prices, our London contemporary found occasion recently to observe: "To our minds the influence of dealers in crude rubber has been exaggerated out of all resemblance to the real." At least no proof has ever been offered of the contention by many buyers of crude rubber for consumption that they are made to pay unduly high prices by improper manipulation of the market. It has been our observation that from time to time the conditions of trading in rubber have changed materially, and that dealers have succeeded or failed, in proportion as they have adapted themselves to circumstances over which they had no control.

One may at the same time hear the assertion that rubber prices are being controlled arbitrarily in Liverpool and in New York, according as one happens to be on one side or the other of the Atlantic. At the same time, also, a rise or fall in rubber is attributed to influences at Pará or on the continent. But this mysterious influence is always as elusive, when search is made for it, as the "rubber trust" which, according to the newspapers, has been in control of the rubber industry as far back as we can re-

member. There is no man living who can predict either the production or consumption of rubber twelve months, or six months, or even three months ahead, and it is as little possible to say what prices will be. If such predictions could be made with certainty, the India-rubber merchants would speedily rank with the richest men of the day.

We fail to find, however, that the profits of this trade are signally larger than in any other important branch, giving employment to men of equal business capacity. One thing to be noted is that, in proportion to the number of houses in the two branches, the manufacturers appear to continue in successful careers longer than the dealers in raw materials. For example, in a list of 45 rubber consignees at Liverpool and London printed by our contemporary seventeen years ago, only three names now appear in the trade, while of all the New York firms receiving rubber in 1881, only one is now so engaged. Did all the others make so much money in rubber that they could afford to retire? At any rate, most of the important rubber factories or two decades ago, both in England and America, are still in operation, and most of them on a larger and more prosperous scale.

To recur to the article in our contemporary, its editor appears to have encountered in the British rubber trade a feeling of distrust of reports on the raw material market, on the ground of their being apt to be controlled by "the influence" which has been engaged "in building up the crude rubber trade." It is interesting, in this connection, to note that the London *Electrical Review*, which only now and then touches upon the crude rubber situation, and which cannot reasonably be supposed to have been subsidized by "the influence" above referred to, has this to say in its issue of December 11:

The prevailing idea that speculation on the part of a few individuals has done as much or more than anything else to run up the price may be dismissed as having very little foundation. True, there is a certain important firm of raw rubber merchants who are credited rightly or wrongly with holding stock to such an extent as to rule the market, and to render futile the efforts of competitors to control any action they may see fit to take. But whether this be so or not we are certainly not inclined to ascribe to this firm the fact that rubber reached such a high price two months ago. That the firm in question have profited by the situation can hardly be doubted; to say that they created it is, however, far too bold a statement to make. We say this not only because we lack proofs, but because there are other and good reasons to look elsewhere for the determining factor or factors. The employment of rubber has shown a continual increase, and though the output of raw rubber from the Amazonian forests has also increased, it has only been about in proportion to the demand, so that there has been no accumulation of stock to meet any sudden disparity between demand and supply. There is no need to discuss the question of any failure of supply in South America, at all events. There is plenty of rubber yet, but in order to keep the price down, it is necessary that sufficient be gathered at the time it is wanted.

While not assuming to say actually how much rubber may have been held at any time by the Liverpool house in question, we may state that, according to reports generally credited in the trade, their holdings of Pará (excluding Peruvian), in "first hands" and "second hands," on the 1st of each of ten months past, averaged about 440 tons, out of average total holdings in Liverpool of about 1040 tons,

and a total world's visible supply of Pará averaging on the 1st of each month about 3500 tons. It may occur to some people that holdings no larger than these figures indicate would hardly enable a single firm to put up the prices of rubber to every consumer in the world, for a period of several months. Another point that may be of interest is that the stocks credited to the above firm were very materially reduced before the heavy rise which culminated in September.

"HEVEA" RUBBER IN DAMP LOCATIONS.

OUR purpose in devoting considerable space in this issue to the rubber tree disease in Ceylon is not, in any way, to discourage the culture of rubber, but to further its practical development so far as the dissemination of accurate information can aid in progress. There is no planting interest known to us in which, in some locality or other, troublesome and even disastrous pests or maladies have not had to be dealt with. It would be unwise, therefore, in view of such liability in a new branch of planting, not to give the fullest publicity to the first troubles encountered. Fortunately, the government of Ceylon embraces a well conducted scientific department, the services of which have been availed of by the rubber planters in that colony at the first warning of danger, and without doubt the newly discovered disease will be held in check.

There is one point in connection with the report of Mr. Carruthers's views, on another page, which may appeal to some persons elsewhere who have had in contemplation, the planting of Pará rubber (*Hevea*). He asserts that the canker which he has been engaged in studying, in plantations of *Hevea*, has a tendency to make itself apparent "rather more in damp places than on ridges and well drained places;" in other words, swampy land will tend greatly to encourage the disease. This point is especially worth emphasizing, in view of the widespread misapprehension that the Pará rubber tree is a native of marshes and swamps. Such is not at all the case, and we fear that some of the planters, say in Mexico, who have planned to devote to *Hevea* certain wet spots not suited to *Castilloa* rubber, will find this course a mistaken one.

Mr. Stanley Arden, in his valuable "Report on *Hevea Brasiliensis* in the Malay Peninsula," has collected some evidence of weight on this subject, including the testimony of Mr. Wickham, who collected the seeds for the original planting of this species in the Far East, that they came entirely from trees growing on well drained table lands in Brazil, and not from locations bordering on watercourses. It is true that the rubber gathered in the Amazon valley is derived mainly from the borders of streams, but in that country means of transportation are confined to the rivers, and the rubber gatherers at their work do not go to any great distance from points which can be reached by boats. It is true, also, that many rubber camps are flooded every year to an extent which drives the workers from the country. But this does not make marshes or swamps of the rubber districts. Even where the banks are not overflowed, the rain is so constant at certain seasons as to

make the work of rubber gathering impossible. In a report on the Purús river—the principal rubber producing river in Brazil—by Mr. Steere, and quoted from in this issue, there are frequent references to the high banks, and the first rubber camp visited by him was reached by "a steep climb of perhaps 150 feet" from the water's edge, though that was in the season of high water.

There is no record of *Hevea* rubber thriving in situations where water stands habitually, either in Brazil or elsewhere, and for the most part the planting of this species in Asia has been confined to lands suitable for coffee and tea. There has been some planting, however, in wet districts, and, according to the Ceylon official scientist, these regions exhibit the greatest prevalence of the rubber canker.

RUBBER IN "FIRST HANDS."

WHEN one studies the countries which yield rubber naturally, and the conditions of life in them, it becomes easy to understand why the cost of this product remains so high as compared with most other materials in wide use. Another page of this Journal is devoted to some extracts from a recent work by a scientist who, in the study of Brazilian Indian tribes, came now and then in contact with rubber camps of the type from which is gained a great share of what we call "Pará rubber," and while this explorer has not undertaken to write a report on rubber, we feel that he has contributed to an understanding of the rubber situation by his incidental references to the subject.

There is no other class of intelligent men, of equal number, at work in any part of the world to-day, under such conditions of isolation and deprivation as the *patrões* whom Mr. Steere met on the river Purús, living on unsalted fish and wild game; in a climate where it rains every day, even in the "dry season," and in constant danger from fevers; with no other society than that of their Indian employés, who can hardly be congenial, even though "civilized and Christian," as Mr. Steere expresses it; with perhaps no communication with the outside world until the yearly floods drive everybody from the scene of their work.

The isolation of the American farmer in pioneer days was not comparable with that of the owner of a rubber camp; the one had neighbors of his own kind, the other is obliged by the nature of his work to go far away from every other camp to find fresh rubber fields. The pioneer farmer, too, was inspired by the hope of founding a home, a community, and a state, none of which things can result from the efforts of the rubber man. He may hope to grow rich some time and return to civilization—but he never does. If his shipment this year brings a good return at Manáos or Pará, he spends the money freely in relaxation after a year's drudgery; if not—and too often this is true—he begins the new year in debt to his merchant, and to the other features of a hard life, is added the dispiriting task of paying off old scores.

Of course we may say that these men are not obliged to

hunt rubber against their will, and of course people in civilized lands to whom the use of rubber brings added luxuries are not called upon for sympathy for their exiled fellowmen whose work contributes so much to their comfort. At the same time we feel that our readers will at least be interested, now and then, in such side lights on the business of collecting rubber as explorers may happen to give us, even if for no other reason than it helps to explain the high cost of the chief raw material of their industry. One other consideration is that, with the business of gathering wild rubber attended by such conditions, which it seems impossible to improve, the cultivation of the product in more favorable latitudes receives its strongest encouragement.

GREAT AND GOOD NEWS continues to come out of Colorado in regard to the marvelous wild plant, lately discovered in that state, and which is alleged to contain "good rubber, equal to the best Pará article." We learn from the able Gunnison *Champion* that "this was discovered by a man whose hunger led him to chew the roots of the weed." Our contemporary does not state whether the result was relief for the starving man, but it is evident that rubber good enough to eat must be pretty good rubber. At the same time, the taste of a famished person is not always trustworthy, and it is possible that the same individual, with a well filled stomach, would not value the Colorado rubber so highly.

THE LAST MARKED ADVANCE IN RUBBER, while it mystified even many of those best acquainted with the trade, was no cause of wonder to the able *Hartford Globe*. According to our contemporary:

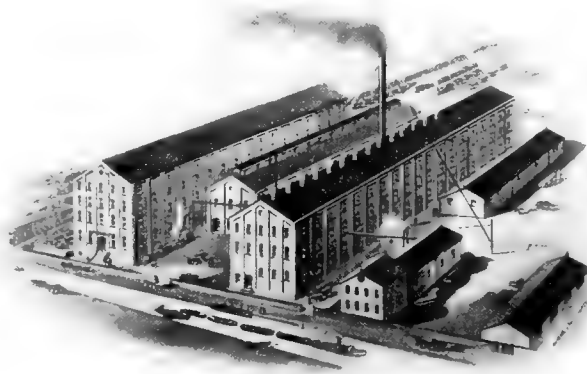
"Early in the year J. Pierpont Morgan took a hand in the game, and made his influence felt by an immediate and persistent rise." The "rise" in rubber being less "persistent" at this time, we must infer either that Mr. Morgan got out of "the game" all that he wanted at the time, or else that he has been no more successful than certain lesser financial magnates in an attempt to "corner" rubber. But is the *Globe* still convinced that Mr. Morgan had anything to do with the market?

THE PROSPECTUS OF ONE of the new rubber planting companies in Ceylon, in pointing out reasons for anticipating good profits, mentions the advantage which they expect to have over the shippers of rubber from Brazil, where an export duty of 23 per cent. *ad valorem* is imposed. It might have been added that there is no probability that the Brazilian rubber states will cease to levy a tax on exports within the lifetime of the Ceylon planters; it is practically their sole source of revenue to-day, and there is no present prospect of anything to take its place.

REGARDING the extra tax on rubber at Manáos for the benefit of the Banco Amazonense, the governor of the state was requested recently by the federal government to use his good offices for the abolition of the tax, and he refused on the ground that the bank is a useful institution.

RUBBER WORKS AT LITHERLAND.

THE illustration herewith represents a view of the works of the Northwestern Rubber Co., Limited, of Litherland, Liverpool—an enterprise in which American capital is interested to a certain extent, and one which is of interest to the trade in general as introducing the production of reclaimed rubber on a large scale in a new field. This plant is located on the Leeds and Liverpool canal and has also convenient shipping facilities by rail. The buildings embrace two principal structures of brick, each 240×68 feet, and respectively three and four stories in height; a power house 175×70 feet, a storehouse 100×50 feet, and two other buildings, respectively 77×44 and 100×50 feet. These dimensions are given to indicate that already the facilities possessed by the new company are extensive, and the demand for its products have kept the plant fully employed. The company own altogether sixteen acres of land, which will afford ample opportunity for any further increase of the factory. The president of the company is Mr. Arthur H. Marks, of the Diamond Rubber Co. (Akron, Ohio), and the inventor of the reclaiming process employed at Litherland. The vice president and treasurer is Mr. William Alexander Smith, vice chairman of the Byrant & May Co., match manufacturers, and director in the National Telephone Co. and a number of other British companies. The directorate includes Messrs. William B. Hardy and O. C. Barber, who are directors also in the Diamond Rubber Co., and Mr. Henry G. Wright, of William Wright & Co., rubber merchants of Liverpool. The general manager and secretary is Mr. Ernest E. Buckleton, who, although an Englishman, has a very wide acquaintance in the United States due to his connection with the trade here for several years.



RUBBER RECLAIMING WORKS AT LITHERLAND.

The mechanical equipment of the plant is very complete, and has been kept busy in supplying orders from British and Continental rubber factories.

A CORRECTION FROM MANCHESTER.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We see that in your notice of the opening of our Canadian branch on page 97 in your December 1 issue, there are one or two slight inaccuracies, which we shall be glad if you will correct.

The correct name of the firm is I. Frankenburg & Sons, Limited, not Isidor Frankenburg Sons & Co., Limited, and the firm was originally established about 1866, not 1876. Moreover, we notice you say that the manufacture of leather goods has been replaced by that of electric cables. We should like to point out that we still continue our leather department, which, instead of being superseded, has gone ahead very fast. We are also now large manufacturers of rubber shoes and tennis shoes.

We thank you in anticipation for making these corrections and remain, Yours faithfully,

I. FRANKENBURG & SONS, LTD.
HERBERT STANDING, Secretary,

Salford, Manchester, December 15, 1903.

THE RUBBER TREE DISEASE IN CEYLON.

THE question of the canker fungus in rubber (*Hevea*) was discussed at a special meeting of the Kalutara Planters' Association, at Tebuwana, in Ceylon, on October 31, which was addressed by Mr. J. B. Carruthers, the government mycologist, who for some months had been making a study of the subject. The details which follow are derived from *The Times of Ceylon*.

This disease in rubber trees in Ceylon was first discovered two years ago by a forestry official. During last summer specimens cut from rubber trees were sent to Mr. Carruthers from several districts, in some of which he found the *nectria* or canker fungus. The specimens contained *mycelium*, and on investigation by means of cultures, Mr. Carruthers found spores belonging to a species of *nectria*. Inoculations were then made on trees, this being the only way to prove the guilt of an individual parasitic fungus as the cause of any disease. *Nectria* grow on apple trees, cacao, tea, etc., and eventually affect and kill many kinds of trees.

After preliminary investigations at the botanic garden at Peradeniya, Mr. Carruthers visited fifteen or more estates—practically all the rubber plantations of any size—in the Kalutara district, with the result that it is estimated that about one tree in every 200 is affected. On the other side of the river, about 40 per cent. of the rubber trees on the Yatiporua estate and 20 per cent. of those on the Edengoda estate are affected. The canker has existed on these two estates for five years or more. The address of Mr. Carruthers ran, in part:

"Coming now to observe the aspect of the disease on trees, as a general rule the external appearances on the rubber tree are roughened and swollen places in the stem and branches. These, on cutting off the outer bark, show discolored tissue, at first a neutral tint color, and afterwards brownish and claret color. When shaved the whole of the diseased parts are shown up like an outline colored map in the lighter colored healthy tissue. When the canker fungus has been growing in such a spot for some time—I cannot definitely say how long, as this depends on physiological conditions—the fruits are produced, at first pink or whitish spores, and later round red fruits like cayenne pepper, which look, on examination under a magnifying lens, like crystallized strawberries. The structure of these red fruits is the means of identifying the fungus as a *nectria*. The canker spreads through the agency of the wind in dry weather, by water, and by insects such as red ants which carry the spores on their legs and bodies in travels over the trees. The only conditions necessary for spores to grow are damp and moisture, both of which Kalutara always has.

"As regards the general health of rubber in the district, it is good—very good, notwithstanding the dropping of leaves, drying back of young branches, and irregular deciduity in certain rubber trees. The preventive methods I would recommend are inspection by gangs of coolies, cutting out the canker, and the entire excision of affected portions, and the burning of all bark cut off and dead branches. The burning of dead branches is a most important matter. Personally speaking, I believe—though I am perhaps rather rash to speak on this matter to planters who have practical experience of these things—the best way to tackle a disease like this is not only to look out for this *nectria* canker disease, but to observe any and all diseases that may arise. With regard to the cultivation of rubber—as also in the case of other products—a regular inspection should be made

during a considerable time of the year, so that the moment anything unusual is noticed in the way of disease it can be treated by simple means at the initial stage.

"As regards the time of the year for observing the disease, I think dry weather is the best. You can see it better and also observe the effect of the same. The disease is better seen in dry weather; it is much more easy to spot then than in wet weather. If you cut out a portion of your tree when the weather is damp and moist and leave a small portion of the disease in the area cut out, the fungus will struggle on and regain a foothold, but if you did that in dry weather it would completely drive out the fungus. So that there are two reasons to show that dry weather is the best for observing and for dealing with the disease.

"With regard to the applying of mixtures on diseased parts, there is no doubt that theoretically and practically it is sound, but I have reasons for not recommending this. In my experience the farmers in England and planters out here very often, if any wash is recommended, show a tendency not to carefully cut out any portion of the diseased bark, but to simply smear the bark with the mixture in a general sort of way, and the natural result is that the fungus goes on in its fell work under the wash, so that the treatment is of no avail. If you cut out the diseased portion of the bark and smear the wound with blue-stone, the result would be advantageous, that is, if there is no slovenly work done with regard to rubber disease—as in the case of cacao cultivation. The Tamil cooly can be shown in a very short space of time how to spot the diseased trees. When it comes to cutting off portions of the bark in the trunk or branches there should be no hesitation. The whole of the affected portion is full of the *mycelium* of the fungus and will not produce *latex*, so that you are not damaging your tree to any extent by cutting off such portion as is affected. After operation on the affected portion the tree will go on as usual. The rubber tree, gentlemen, has a wonderful power of growing and producing new tissues.

"Too much importance cannot be attached to this gang inspection. Whenever the bark of the tree is rough, and has a larger corky layer than the average bark, I find that where you scrape the bark there is no disadvantage to the living tissues of the tree, and it seems probable that they are even stimulated by this treatment and the amount of *latex* increased. With regard to the production of an abnormal or corky bark it would be well to groom it and see whether there is any unhealthy tissue right behind. There is one thing that I ought to have touched on, viz., with regard to the scare raised by people which your chairman has referred to; and in this connection some people seem to be scared on observing rubber trees in some places dropping their leaves.

"This dropping of leaves, and even branches, I think is due to climatic or unforeseen reasons. During the short time I was in this district I saw trees which had previously dropped their leaves and had dead branches on them recovering, producing buds, and pushing on, and I am quite certain that this *nectria* fungus was not responsible for the abnormal dropping of leaf and drying of certain branches. This is a question which I should wish to have gone into rather more fully, but you will understand that when one has something in hand to deal with, it is better to devote one's attention solely to the point in question. Therefore I have not very closely studied this question

to ascertain the exact cause for this dropping of the leaves. I have not found that any typically diseased trees had dropped their leaves nor had they dead branches. So we may take it that there is no connection between *nectria* in rubber and any abnormal dropping of leaves, or dying back of branches, which are probably due to an abnormal season or to a tree being in an unsuitable place, or, through some accidental reason, not being able to do so well as its neighbors."

In answer to questions by members Mr. Carruthers said: "Unfortunately there is a deepseated belief that, if there be any disease on a tree, the plants produced from such tree are liable to have the disease. I can assure you that this is not so. If you had a cankered tree on which a branch or branches were dead, the fruit produced on the living portions of the tree would be absolutely good for planting purposes—as good as fruit from any other tree."

"If there is *nectria* on the bark, it will not affect the root of the tree. I experimented and tried to get the canker to grow on the root, but it was of no use. *Nectria* canker affects the tissue in the bark of the tree or branch, but not the root tissue. The same applies in the case of seed. There is absolutely no fungus in seed, and plants produced from seed off diseased trees will not inherit that disease."

By Mr. Dove: Do you consider there is anything very serious in this rubber disease?

Mr. Carruthers: Not at all.

By Mr. Gollidge: Do you think the tendency of the disease to make itself apparent will be greater in low lying land?

Mr. Carruthers: Rather more in damp places than on ridges and well drained places.

By Mr. Gollidge: Swampy land will tend greatly to encourage the disease?

Mr. Carruthers: Yes, when once the disease has got hold of the tree.

By Mr. Tisdall: The disease can be eradicated?

Mr. Carruthers: Yes.

By Mr. Farquharson: A certain margin should be cut round the diseased portion?

Mr. Carruthers: I think two inches would be on the safe side.

A motion was adopted unanimously by those present:

That this meeting is gratified to hear that the number of rubber trees in this district affected by the canker is so extremely small, but, recognizing that this and other evils may by neglect assume serious proportions, resolves to undertake on all estates in the district the regular inspection of their trees with a view to prevention of diseases, and to treat the trees in the way recommended by the government mycologist—i. e., the excision of all cankered bark and the burning of all dead and dying branches.

It is understood that the details of the nature and effect of the rubber canker will form an early issue of the "Circular" published from the royal botanic garden of Ceylon.

A RUBBER COUNTRY AND ITS PEOPLE.

AN interesting study of a region important for its production of India-rubber, but little known to the outside world, appears in a "Narrative of a Visit to Indian Tribes of the Purús River, Brazil," by Joseph Beal Steere, and published in the latest Report of the United States National Museum (Washington). The author was commissioned by the Museum to make some studies with a view to completing a series of exhibits for the Pan American Exposition at Buffalo, in 1901. He planned to visit certain Indian tribes on the lower Amazon, but at Pará he was told that these Indians were spoiled, for ethnological study, by contact with missionaries and civilization, and hence he proceeded further.

It seems that no wild tribe now lives on the lower Amazon or its navigable branches. The ancient inhabitants have in most cases entirely disappeared, many tribes without doubt becoming extinct, though a few individuals may have merged with the hardier Tapuios (Tupuyan family), the civilized and Christian Indians of the Amazon. Great tracts of the country are entirely without human inhabitants, as the latter generally live in small villages and scattered cabins along the navigable streams only. Wild tribes still exist on the headwaters of the rivers, where impassable forests and dangerous rapids separate them from the traders and rubber gatherers below. There are supposed to be some wild Indians on the river Guamá, within 150 miles of Pará, but a visit to them would require a strong party and several weeks' time in ascending rapids in canoes.

Mr. Steere chose to ascend the Purús, the mouth of which he reached by two days' steaming up the Amazon from Manáos. For several hundred miles of the Purús's lower course the forests produce but little rubber and nuts, the staples of northern Brazil, and settlements are seen only at long intervals. The people seen along the stream live by chopping wood for the steamers and catching fish and turtles which are sold to the steamboat people for food. Some references to the upper Purús follow:

As we approached the mouth of the Tapauá, though to the unpracticed eye there was no change in the character of the never ending forest, the settlements of the rubber gatherers became frequent. The rubber station usually consists of a large building (the *barracón*), generally built of wood or mud and roofed with tile. The lower story serves for a salesroom and for storage, and the upper story for a home for the proprietor (*patrón*) and his family. Around the station are scattered palm thatched cabins, the homes of the rubber gatherers. Though most of the settlements are of this kind, at Canutáma and Libria [Labrea] towns of several hundred inhabitants have sprung up.

The rubber gatherers are a mixed population, chiefly Tupuio, gathered from all of the older settlements of the Amazon and led here by the hope of making money easily and quickly in the rubber business. Of late years large numbers of people [Cearenses] have come up the river from the state of Ceará on the seacoast, from which they were driven by famine caused by excessive drought.

Near the mouth of the Ituchy* the steamer stopped at the little station of San Luis de Cassyaná, the property of Colonel [Colonel] Gomez, who has made his fortune in rubber and is called the king of the Ituchy. Two steam launches for navigating the Ituchy and numbers of smaller craft anchored in front of his *barracón*, with \$10,000 or \$15,000 worth of rubber lying on the bank ready for shipment, were marks of his enterprise and prosperity. Several of the dugout canoes of the Paumarí Indians (Aranau family) were drawn up on the bank, the first signs of aborigines we had seen, and as our freight was carried on shore a half dozen Paumarí women came down and helped carry it to the storehouse. --- The only man among them, after carrying a few loads up the slippery bank through the mud and rain, with the promise of a drink of rum as pay, gave it up in disgust.

Anciently these Indians were much more numerous and are said to have occupied the Purús down to near its mouth. They are now reduced to a few hundred, expert swimmers and boatmen, and living almost entirely upon fish and turtles. During

* Also Ituxy; 692 miles from the Amazon. At the junction of the rivers is the town of Labrea, mentioned above, where an electric lighting plant was erected in 1902 and waterworks were being planned. [See THE INDIA RUBBER WORLD, June 1, 1902—page 282.]

the dry season they lead a wandering life along the river from the Ituchy to the *cachoeiras* (rapids of the Purús). They go from place to place, in little dugout canoes, carrying their huts with them. In the rainy months, when the sand bars are covered with water, they retire to the lakes, where they live on rafts of dead logs tied together and floored with strips of palm wood. They are a humble, cowardly race, and live in deadly fear of their neighbors, the Hypurinás.

Two days of slow steaming brought the party to Hyutanihan* just below the rapids, and to the end of their journey. On a plateau 150 feet above the river stood a dozen palm thatched cabins of the rubber gatherers, in a clearing of several acres, now no longer cultivated. The people, patrón and all, were from Ceará, and now, as there was too much rain for rubber working, were busily engaged, some making canoes, others handsawing planks under a shed near the beach, and still others cutting wood for fuel for the steamers. As the party arrived a large tapir was being brought in, killed in the forest for food.

A trail some 25 miles in length had been cut by hunters for rubber and nuts, across to the little river Marmoreá Miri, which enters the Purús 60 miles below. Starting out on this trail Mr. Steere came to the settlement of Paulo Xavier, a patrón, with three or four rubber gatherers. He told the explorers that at the end of the trail would be found a deserted rubber station, but no canoes, and the party returned to Hyutanihan. To that station two men came next day—a Cearense and a Hypurina Indian—over the same trail, after mail (!) and food. They purchased a turtle, weighing 70 or 80 pounds, which the Indian carried home, alive and kicking, on his back. Mr. Steere walked with them to Xavier's place, mentioned above, where the three men and the turtle got into a canoe and rowed down a small stream to the Marmoreá, spending the night in a vacant *barracón* of handsawed lumber, surrounded by three or four thatched cabins, the former owner of which had failed at the rubber gathering business and gone down the river to work for someone else. The following day the party went up the Marmoreá, shortening the distance in more than one place by rowing the canoe through the forest, and avoiding the bends in the river, it being the season of high water. There were forest trees 80 feet high covered to the top with festoons of red and white morning glory (*Convolvulus*) flowers.

Just before night we came to "San João," the seat of Senhor João Nogueira and the only living rubber camp on the Marmoreá. The station was a new one, having been established but two years, but several acres were cleared along the river and planted to corn and *manihot*. The patrón, Senhor João, like the rest, was living in a palm thatched barrack, but was getting out timber for a better house. Several men were at work under a shed making a big canoe to transport his rubber down the Marmoreá to the Purús and market. He seemed glad to see a stranger in this remote part of the world and did his best to make my stay pleasant. My hammock was hung that I might rest after my cramped ride in the canoe, and one of the few chickens he had saved from the vampire bats was sacrificed for my supper. Several monkeys of different species were running about or were chained to the walls.

Senhor João the next day offered to guide his guest to where wild Indians could be found, and they started afoot through a deserted rubber trail, accompanied by the Cearenses, but coming to where the road was flooded they happened to meet a naked Indian paddling a little bark canoe through the woods. The four pedestrians climbed into the boat with the Indian, causing it to sink until the water came into the ends, but the boat was patched with clay and the party proceeded for several miles when they were able again to proceed on foot. In the

afternoon they reached a deserted village, or rather village house, of Jamainadi Indians. Formerly it had sheltered 130 people, who maintained a considerable plantation, but all had died of black measles introduced from a visitor down the Purús. Half an hour later another Jamamadi settlement was reached, where the American and his party spent the night. Mr. Steere had in his pack an assortment of little looking glasses, bright colored handkerchiefs, and beads, which he was able to barter for a complete outfit of Indian weapons, ornaments, utensils, and household goods—articles of native use of which he was in search. There appear to be now only two or three small settlements of the Jamamadi in existence, all on the Marmoreá, their number having decreased rapidly since the coming of the rubber gatherers.

The journey back to "San João," part of which was made in the same canoe manned by the naked Indian, was made more difficult on account of the load to be carried, including a large gray monkey in a cage. Mr. Steere himself carried a bundle of arms, so long that it constantly struck the trees along the path. On the way they passed a communal house of Hypurina Indians, all of whom appeared to be away on a hunting expedition. These people are reputed cannibals and are more warlike than the Jamamadi. They do not, however, attack the white settlers, and some of them have been employed in rubber camps.

Senhor João had *estradas* open for 50 rubber gatherers, but had only 15 or 20 men employed and little chance for getting more, the station being 50 miles from even the rude settlements of the Purús. Besides, the location seemed unhealthy, and, Mr. Steere left his supply of quinine for some of the men who were suffering from fever. The above notes record practically all of Mr. Steere's contribution to the subject of the sources of rubber, the remainder of his work being devoted to his observations of Indians who have not been "spoiled" by civilized man, with studies of their language and customs, including photographic views.

* * *

THE Purús has been called the most important of the affluents of the Amazon; it certainly has been the most productive of rubber, not to mention the great quantity which comes down the Acre, from Bolivia, into the Purús and thence to Manáos. In the year ending June 30, 1903, the Purús brought over 13,000,000 pounds of rubber (exclusive of Caucho) to Manáos, counting the Bolivian product. In the calendar year 1902 the Purús brought, from Brazilian territory alone (including Caucho), nearly 11,000,000 pounds. This heavy rate of yield has been maintained for years, but only by means of the rubber gatherers constantly removing their camps further up the river, and the conditions of life show little improvement, the workers always being "pioneers" wherever they may happen to be engaged. The Purús was explored by Chandless for 1000 miles above the highest point mentioned by Mr. Steere, and it has many tributaries navigable for long distances, but through the rubber districts along those streams the same solitude prevails, except here and there where a trading station at certain seasons attracts a considerable transient population.

THE American Asbestos Co., with \$1,000,000 capital and headquarters at Montreal, has been incorporated in Canada to conduct a mining business, with special reference to asbestos. The company is composed principally of Boston people, including H. M. Whitney, one of the leading capitalists of that city, who is its president. The company has acquired the Kerr asbestos mine, at Black Lake, and purposes treating the product with electricity.

*This point, according to the Baron de Marajó's "As Regiões Amazonicas," is about 805 miles above the Amazon.

SULPHUR IN ITS RELATION TO VULCANIZATION.*

OF all the materials used in the manufacture of rubber goods, Sulphur, next to Rubber itself, is not only the most interesting by reason of the great variety of states it is able to assume, but it is the one whose reactions both in the vulcanizing process and in kindred combinations should be more generally understood by manufacturers. The better manufacturers are acquainted with the characteristics of the materials used by them, the better they will be enabled to avoid mistakes, to improve the quality of their products, and, what is of the greatest importance, to more easily discover the causes of defective goods that are occasionally made even in the best conducted establishments.

It is now generally conceded that in the vulcanizing operation Rubber and Sulphur chemically unite. We have therefore as a result of this operation a Rubber sulphide, as we have Hydrogen sulphide as the result of the combination of Hydrogen and Sulphur, and Iron sulphide as the result of the union of Iron and Sulphur. The Hydrogen sulphide and the metallic sulphides may be formed by a direct union of the elements, assisted by heat, in the same way that Rubber sulphide is formed.

The velocity of the union of Sulphur with Hydrogen and the metals is increased with each increase of temperature, as is quite universally the case with chemical processes. The converse of this is also true, that with each reduction of temperature, the rate of the union of Sulphur with Hydrogen and the metals is decreased, as it is with chemical processes in general. When we once comprehend fully the nature of the formation of sulphides by the direct union of the elements, the great mystery surrounding vulcanization disappears. The production of the Rubber sulphide is a simple chemical process—the union of the rubber hydrocarbon with sulphur—brought about by the same means as the production of the other sulphides mentioned.

The velocity of many chemical processes, besides being accelerated by heat, may be accelerated by the presence of other substances which do not pass into the products of the reaction. A well known example of this is the use of Manganese peroxide in the production of Oxygen from Potassium Chlorate. Oxygen may be obtained from the Chlorate by simply heating it in a flask. But if it be mixed with Manganese peroxide in fine powder, the Oxygen is produced more freely and at a lower temperature, but the peroxide itself undergoes no change in the reaction. In like manner the union of Rubber and Sulphur in vulcanization is made to proceed both faster and at a lower temperature by adding litharge in fine powder to the compound of Rubber and Sulphur. The litharge does not pass into the products of the reaction, but it enables vulcanization, which would take place more slowly and at a higher temperature without the addition, to proceed at a greater velocity and at a lower temperature. Other substances are sometimes used in place of litharge, but perhaps none of them with so marked an effect.

As the velocity of chemical processes of all kinds rapidly increases with rising temperature and rapidly decreases with falling temperature, it would naturally follow that the production of sulphides, whether of Rubber or of Hydrogen, and the metals, can take place at lower temperatures than those at which we have been accustomed to observe them. It can accordingly be

stated that vulcanization can take place at any temperature below that ordinarily employed, and above the freezing point of Rubber, if sufficient time be allowed. "We have in general no ground for supposing that any chemical process which can take place at a higher temperature cannot take place at a lower."—(Ostwald.)

Many of the metallic sulphides can be formed under the influence of pressure without the aid of extraneous heat. When a mixture of Sulphur in suitable proportions with Magnesium, Zinc, Iron, Cadmium, Bismuth, Lead, Silver, Tin, or Antimony in very fine powder is subjected to a great pressure, at ordinary temperature, a part of the metal is transformed into a sulphide. If the cake which is thus formed be reduced to powder and the operation be repeated a few times, the entire mass can be converted into a sulphide. Pressure therefore seems to bring about, in this instance, the same result that is brought about by increase of temperature. That is, it hastens the formation of a product that otherwise would be more slowly formed at the same temperature. May we not therefore expect that pressure will hasten the formation of the Rubber sulphide at whatever temperature it may be employed? It was formerly thought that pressure, being purely mechanical, was without influence on chemical reactions, but modern chemistry recognizes its influence on chemical processes in general.

Native Sulphur exists generally in the neighborhood of volcanoes, either in amorphous (uncrystallized) or in crystallized masses, or mingled with the earth from which it is separated by simple fusion or by sublimation. It is also emitted in the form of pure Sulphur vapor from many extinct volcanoes of which Mt. Popocatepetl is a well known example. Iron pyrites furnish quite a proportion of the Sulphur of commerce which is separated from the pyrite ores by roasting.

At Mt. Popocatepetl large quantities of Sulphur are produced. The Sulphur vapors which are emitted from the fissures at the bottom of the crater are conducted through long wooden galleries in which they crystallize or condense in beautiful masses of pure Sulphur. As this mountain is about 17,500 feet high and as the bottom of the crater can be reached only by means of a basket and rope raised and lowered about 600 feet by a windlass, the labor of transportation must be very great. But after the galleries are once placed there is no further expense attending the production of the Sulphur.

Sulphur belongs to that class of substances, called *dimorphous*, which can crystallize according to two different systems. When crystallized from solutions it assumes the form of octahedral crystals, which are of the same form and appearance as native sulphur crystals that are sometimes found very large and perfectly pure. When crystallized by slowly cooling from a melted condition, it assumes the form of oblique elongated prisms, which are usually called prismatic. The temperature at which Sulphur is crystallized usually governs the form of the crystals. If crystallized at 212° F. or over, prismatic crystals are formed. If crystallized at a low temperature the crystals are octahedral. These different forms cannot, however, in all cases, be explained by the differences in the temperatures at which they have been formed, as both forms are sometimes developed at the same time, from the same solution in carbon bisulphide, when it is allowed slowly to evaporate.

Sulphur is chiefly known in the form of Brimstone, Roll

Sulphur, Flowers of Sulphur, Precipitated Sulphur, and Milk of Sulphur. Brimstone is the Sulphur of commerce as imported from Sicily. When Sulphur vapor is condensed in a chamber above the melting point of Sulphur, it condenses into a liquid state which, when poured into cylindrical moulds and cooled, is the ordinary Roll Sulphur, and is a mass of prismatic crystals; but if the temperature of the chamber is kept somewhat below the melting point of Sulphur, the vapor condenses in the form of a very fine powder which is Flowers of Sulphur. These belong to the amorphous or uncrystallized variety, but they gradually change to the octahedral form.

Flowers of Sulphur and Milk of Sulphur are not materially different except in appearance. Milk of Sulphur, being formed by precipitation from aqueous solutions, is so finely divided that its color appears to be white, though it is actually yellow. On account of its extreme fineness it is more subject to chemical changes.

These various forms of Sulphur differ not only in appearance but in many other respects. Their hardness and density and their melting points differ. They differ in their power of refracting light, in their behavior to solvents, and are differently acted upon by heat and by various chemical reagents, though when they enter into combination with other elements they form identical chemical products.

None of the forms of Sulphur are stable except within certain ranges of temperature. At the ordinary atmospheric temperatures all other forms are gradually changed to octahedral and at this temperature this form is the most stable. But if octahedral Sulphur be slowly heated above 205° F. it is changed to prismatic Sulphur. If octahedral Sulphur be plunged in small pieces into a bath at that temperature it melts at 239°, but if slowly heated it fuses at 248°, the melting point of prismatic Sulphur.

Above 205° F. prismatic Sulphur is the most stable, and at this temperature all the other forms are changed to it. "These relations show a very great similarity to the reciprocal transformation of ice and water, or, generally, to fusion and solidification. As in those cases, so in the present, there is a temperature above which only the one form, and below which only the other form, is stable. On passing this point, therefore, the one form passes into the other, and only at this one temperature can the two forms exist together."—(Ostwald.)

This point can be varied by pressure. But a very great pressure is necessary to make even a slight change. The melting point of Sulphur is also changed by pressure. But, in this case also, great pressures are required to bring the change about. Under a pressure of 519 atmosphere its melting point is raised to 275° F. Thus between 248° and 275° a pressure of 288 pounds per square inch is required to raise the melting point one degree, an amount so great as compared with the pressure used in dry air or steam vulcanization, that the effect of pressure in this respect, is of no importance in these processes. A pressure of 20 atmospheres raises the point at which octahedral Sulphur changes to prismatic, one degree. As vulcanization is generally carried on considerably above 205°, this effect of pressure may also be ignored.

Sulphur, however, has no definite melting point, but when heated gradually softens, loses its form, and passes imperceptibly into the liquid state. Prismatic Sulphur melts and resolidifies at 248°. If the temperature is raised to 290°, it resolidifies at 236°, but if heated to 338°, the point of solidification is 234°. At 248° Sulphur is a clear, limpid, light yellow liquid. But if heated somewhat above this point conversion into a peculiar allotropic modification, called Plastic Sulphur, commences. The Sulphur gradually grows more viscous until at 482° it is so

thick that it cannot be poured from the vessel in which it boils at 842°, but at no subsequent temperature is it more limpid than at 248°.

From its behavior, it is inferred that melted Sulphur can assume different allotropic forms, as well as in the solid state, though it has not yet been possible to separate them or to describe their properties.

As Sulphur exists in several different forms both in the solid and in the liquid state, so in the state of vapor it exists in several different forms with different molecular weights. The constitution of Sulphur vapor continually varies with increase of temperature up to 1800°. Above this temperature, the density of the vapor remains constant at 64 (hydrogen being 1). The combining weight of Sulphur, however, being 32, the entirely dissociated molecules of the vapor must consist of two atoms of Sulphur. Sulphur in this form exists in Sulphur vapor at the temperatures used in vulcanization, though at those temperatures the proportion both depends upon the temperature and varies with it. It is in this state that Sulphur vapor combines with rubber in the vulcanizing operation.

If Mercury and Sulphur in the proper proportions be triturated together, the mixture is converted into Mercuric sulphide at ordinary temperature. So if Silver be exposed, at ordinary temperatures, near Sulphur, the result is the black Silver sulphide on the surface.

As Sulphur enters into combination only when in solution or in this state of dissociated vapor, it is evident, from the formation of Mercuric sulphide, that the entire mass of the Sulphur is not only vaporized at atmospheric temperature, but the vapor is dissociated into the form assumed when Sulphur forms combinations. It is interesting to know this fact, as it may tend to explain, by analogy, the dissociation of Sulphur, when compounded with rubber, under the influence of a very moderate temperature.

At ordinary temperatures Sulphur emits a sensible vapor. At temperatures slightly above the ordinary it can pass entirely into vapor. The vapor from a few small bags of Sulphur hung up in a grapery is sufficiently powerful to destroy the microbe or fungus that attacks the grapes. So, in the early days of the rubber manufacture, it was found that Sulphur compounded with rubber preserved it from decay, without the use of artificial heat. At 212° the vapor has a considerable tension which is rapidly increased with each increase of temperature.

As the uncombined Sulphur in vulcanized rubber is neither octahedral nor prismatic, it is evident that after the octahedral crystals have been changed at or above 205° to prismatic, there has been a further change in form.

Under the microscope, Dr. Weber says that this excess of Sulphur appears like extremely small globules. We should expect the Sulphur to take this form. Rubber, for dry heat vulcanizing, is usually compounded with Sulphur, Litharge, Whiting, besides other substances. On an average perhaps 3 per cent. of Sulphur is incorporated with the rubber and more than the weight of rubber in the other mixtures. All of these mixtures are in the finest possible powder, the particles of which can only be observed by the microscope. All of these various particles must be thoroughly incorporated with the rubber. If this operation is performed in an ideal manner, each particle of the compound will be completely enveloped in an extremely thin wall of rubber, and, theoretically at least, each particle of Sulphur will be isolated from each other particle. When this compound is slowly heated in the vulcanizing process, it seems reasonable to expect that after a temperature of 205° F. is passed, all the Sulphur not yet absorbed will be

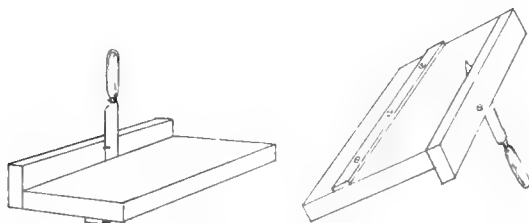
changed to prismatic Sulphur and that it will become melted at 248° . The extremely fine particles will assume the globular form as their surface tension must be very great. In the mean time vulcanization has commenced, attended with absorption of the Sulphur vapor, which is presented to the rubber in the smallest possible amounts and therefore to the largest possible surface of rubber. As the temperature of 248° is passed the rate of vulcanization rapidly increases, until the highest temperature adapted to the compound and the goods to be made is reached.

MAKING MOLDED GOODS IN RUBBER.

A GREAT variety of small molded articles in a rubber factory brings forward the necessity for rapid and inexpensive means for preparing the stock, and pressing and trimming the goods. The methods employed are not always well considered from an economical standpoint, notwithstanding their importance. A few notes on some methods actually employed may be of interest, and afford a clue for further study and development where new problems of this kind need to be worked out.

In the preparation of stock for mold work a good tubing machine is essential. By providing suitable dies stock may be rapidly run for an endless variety of shapes ready to cut into pieces of suitable size to fit the molds. One of the most satisfactory stock cutters for this purpose is a small semi circular or cam shaped blade, attached to a spindle operated by power at a lively speed. The blade is arranged to pass with a shearing action across an opening in a metal face through which the stock from the tubing machine is fed against an adjustable guide to regulate the length of the piece. In this way thousands of pieces an hour may be cut ready for the molds.

Washers and similar thin articles may be punched from a nar-



TOP AND BOTTOM VIEWS OF A SIMPLE GAGE KNIFE.

row strip with great exactness of weight, and with considerable speed if power is used, or a fair rate if cut by hand die. An excellent arrangement for this sort of work consists of a power press, cutting several pieces at a stroke; or with a die making one part of the cut as a hole, and the next the outside of the circle. Boot heels are easily cut by a press of this kind at the rate of 3000 per hour.

Valves and large circular work, such as gaskets, are cut by knives attached to a cross bar at the end of a vertical shaft. The stock is brought upward into contact with the knives by raising the table of the machine by foot power. Calendered slab stock $\frac{3}{8}$ inch or more in thickness may be rapidly cut in strips of any desired width by a simple gage knife made of $\frac{3}{4}$ inch spruce or pine, as shown in the figure. The wood portion consists of a board about 5 inches wide by 10 inches long; on one edge of this is fastened a strip of $\frac{3}{4}$ inch wood about 2×10 inches. On the opposite side a strip of $\frac{1}{2}$ inch iron $\frac{1}{2}$ inch by 10 inches is attached by three or four screws. This iron strip is adjustable by means of the screws to any desired distance from the point of the blade which is pushed through the joint of the main board and wooden back strip. The knife is held to its work by a nail or screw driven in behind it. With

such a simple tool rapid and accurate work is possible in cutting strips for gaskets and similar work.

In the curing of goods it should be noted that the object of press work should be merely to shape and "set" or partly vulcanize the goods, in order to economize the time of the presses. From 10 to 20 minutes at 40 to 60 pounds of steam, according to the stock employed, is long enough in the press. The subsequent final curing can be effected by a wholesale heat in open steam. By this method the stock will have the feel of much better quality than if fully cured in the molds.

The weight of stock to make any given object should be regulated as nearly as possible to the capacity of the mold, that there may be produced the minimum amount of cured trimmings. With some very low grade goods trimming and finishing are most cheaply done by tumbling the articles in a barrel. This treatment removes all traces of the "fin" from the parting of the mold; but, of course, is only adapted to special cases. Such goods as Fuller balls and others of circular cross section are most economically trimmed by means of a small power punch forcing single pieces through a die which trims them clean as they pass rapidly through to a receptacle below. With such a trimming machine, operated by a boy, the expense of trimming need not exceed 10 cents per 1000 pieces.

In valve making it is often necessary to procure a mold quickly to fit certain odd dimensions for which no mold is at hand. This is most easily effected by springing into the circular recess of the base plate of a larger valve mold than is required, one or more rings of thin iron rolled to circular form by hand power rollers and filed on the ends to make a neat driving fit. In this way the size of a valve mold as regards both depth and diameter, may be quickly altered, and the rings if kept and properly marked, are always available for making the same size again.

Rubber molds are frequently useful, inexpensive, and durable when properly made. They are especially adapted to such goods as stair treads, door mats of corrugated design, and a variety of small mats. If carefully handled, such molds give surprisingly long service. They are generally made on a foundation of belt duck built up $\frac{3}{8}$ inch or so thick, like a slab of packing. This is well cured in the hydraulic press and then one ply is stripped out of the face the size and shape of the molded surface desired. The mat or tread pattern is cut in strips or blocks from $\frac{1}{2}$ thick cured rubber packing or corrugated matting. These shapes are carefully cemented in place where the ply has been removed. Care is always taken to leave a supporting margin of 4 or 5 inches of duck around the design. This is necessary to prevent spreading under the molding pressure. If such a mat mold is mounted on an iron plate with supporting edges, it is practically indestructible.

ONE of the leading concerns in the world for the production of apparatus for the extinction of fires is that of Merryweather & Sons, at Greenwich, in England. The founder of the present head of the business was the inventor of the fire engine which won the first prize of the Great Exhibition of 1851 in London. The works turn out practically every type of fire engine and accessory machines, and the disposition of the firm to keep up with the times is indicated by their manufacture of a hose tender and chief officer's buggy driven by a 12 HP. motor. The products of this establishment are shipped to every continent. Messrs. Merryweather & Sons continue the manufacture, on an extensive scale, of leather fire hose, which is made up to a diameter of 9 inches. They also make canvas hose and rubber lined hose, the rubber being supplied by rubber manufacturers.

PAPERS ON AIR BRAKE HOSE—II.

HOSE SPECIFICATIONS AND TESTS.

THE former general and unsatisfactory practice of purchasing air brake hose on twenty-four months guaranteed service has given way, in recent years, to the practice, by the leading railway companies, of requiring the rubber manufacturer to furnish air brake hose in accordance with specifications and prescribed tests. By this means it is hoped to secure goods better adapted to the trying conditions of service; also greater ultimate economy. The comparatively short service of air brake hose and the disasters liable to attend its failure, render extremely important the determination of the matter of the quality and make up best suited to the service required. Naturally there is much similarity in the various specifications already issued. The numerous specifications consulted in the preparation of this paper practically cover the entire field and embrace all the essential requirements.

Most of the railway authorities are inclined to impose exacting conditions on the manufacturer which are of questionable value in securing greater service from the goods, while they unnecessarily add to the cost. For example the excessive 25 pound friction test; the vibrating test under 60 pounds air pressure; and the complicated attempt to figure quantitative relations between friction, tube, and cover. These, however, become of minor concern to the manufacturer if they are provided for in the price of the goods. In general, it may be said that the specifications are not over exacting, considering the object to be attained. It is to be observed that the importance of the air brake hose problem has led the Association of Railway Master Car Builders to study the subject, with the result that the association has issued a standard specification recommended as general practice. This specification will doubtless come into extended use through the operation of the Master Car Builders' rules regulating the interchange of car repairs. They are thus of special interest and are therefore given in full so far as they relate to the subject of air brake hose.

MASTER CAR BUILDERS' SPECIFICATIONS.

IN 1901 the following specifications and tests for air brake hose were adopted as "recommended practice":

1. All air brake hose must be soft and pliable and not less than 3 ply nor more than 4 ply. These must be made of rubber and cotton fabric, each the best of its kind made for the purpose; no rubber substitute or short fiber cotton to be used.

2. Tube must be hand made, composed of three calenders of $\frac{3}{8}$ inch rubber. It must be free from holes and imperfections in general, and must be so firmly united to the cotton fabric that it cannot be separated without breaking or splitting in two. The tube must be a high quality of rubber and must be of such composition as to successfully meet the requirements of the stretching test given below; the tube to be not less than $\frac{3}{8}$ inch thick at any point.

3. The canvas or woven fabric used as wrapping for the hose to be made of long fiber cotton loosely woven, and to weigh not less than 22 ounces per yard, and to be from 38 inches to 40 inches wide. The wrapping must be frictioned on both sides, and must have in addition a distinct coating or layer of gum between each ply of wrapping. The canvas wrapping to be applied on the bias.

4. The cover must be of the same quality of gum as the tube and must not be less than $\frac{1}{8}$ to $\frac{1}{4}$ inch.

5. Air brake hose to be furnished in 22 inch lengths. Variations exceeding $\frac{1}{4}$ inch in length will not be permitted. Hose must be capped on ends with not less than $\frac{1}{8}$ inch or more than $\frac{1}{2}$ inch rubber caps. Caps must be vulcanized on, not pasted or cemented.

6. The inside diameter of all $1\frac{1}{4}$ inch air brake hose must not be less than $1\frac{1}{4}$ inches or more than $1\frac{5}{8}$ inches, except at the ends, which are to be enlarged $\frac{3}{8}$ of an inch for a distance of $2\frac{3}{4}$ inches, the change from the smaller to the larger to be made tapering. The outside diameters must be kept within the following dimensions: The main part of hose $1\frac{7}{8}$ inches to 2 inches; the enlarged ends $2\frac{1}{8}$ inches to $2\frac{3}{8}$ inches. The hose must be finished smooth and regular in size throughout, as stated above.

7. Each standard length of hose must be branded with the name of manufacturer, year and month when made, serial number, the initials of the railway company, also have a table of raised letters at least $\frac{3}{16}$ inch high to show date of application and removal, thus:

D. L. & W. R. R. Co. 11.									
3 - 01	01	A	1	2	3	4	5	6	Serial No.
	02		7	8	9	10	11	12	
	03								
	04	R	1	2	3	4	5	6	
	05		7	8	9	10	11	12	
Name of Manufacturer									

Each lot of 200 or less hose must bear the manufacturer's serial number commencing at 1 on the first of the year and continuing consecutively till the end of the year. For each lot of 200 or less one extra hose must be furnished free of cost for test. All markings to be full and distinct and made on a thin layer of white or red rubber, vulcanized, and so applied to be removed by cutting with a knife or sharp instrument.

8. Test hose to be subjected to the following tests:

Bursting Test.—Test hose must stand for 10 minutes a pressure of 500 pounds before bursting. Each hose must stand a shop test of 200 pounds.

Friction Test.—A section 1 inch long will be taken from any part of the hose and the friction determined by the force and time required to unwind the hose, the force to be applied at right angles to the line of separation with a weight of 25 pounds suspended from the separated end, the separation must be uniform and regular and when unwinding the average speed must not exceed 6 inches in 10 minutes.

Stretching Test.—A one inch section of the rubber tube or inner lining at the lapped or thickest part. Marks 2 inches apart on the test piece; it will then be stretched till the marks are 10 inches apart and released immediately. The piece will then be remarked as at first and stretched 10 inches or 400 per cent. and will remain stretched 10 minutes. It will then be released and the distance measured between the marks 10 minutes after the release. In no case must test piece show defective rubber or show a permanent set of more than $\frac{1}{4}$ of an inch between the 2 inch marks. Small strips taken from the cover or friction will be subjected to the same test.

9. If the test hose fails to meet the required tests the lot from which it is taken may be rejected without further examination. If the test hose is satisfactory the entire lot will be examined and those complying with the requirements herein set forth will be accepted. All rejected hose will be returned to manufacturers, they paying freight charges both ways.

RAILWAY COMPANY TESTS.

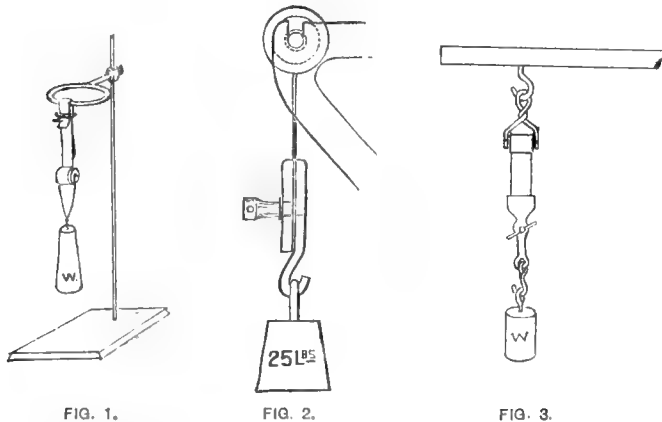
THE majority of roads purchasing air brake hose on specifications require the tests cited in these M. C. B. specifications. There is also a strong tendency to favor enlargement of the ends of hose. This form adapts it with far less strain to the taper of the nipple and shank of the coupling, and consequently lessens the liability of injury to the tube and overstraining the fabric.

Two roads—the Pennsylvania and the Chicago, Milwaukee and St. Paul—limit the expansion of diameter to $\frac{8}{10}$ inch with 100 pounds pressure. The latter road also prescribes a flexibility test. A similar test is also required by the Chicago meat packing concern of Swift & Co., who are large users of rubber hose on refrigerator cars.

The directions for executing all of these tests are found in the specifications issued by the purchasing or testing department of the various railroads. A description of some of the apparatus employed may be worth while.

EXPANSION AND BURSTING TEST.—In the testing room of the Pennsylvania railroad at Altoona, Pennsylvania, is an arrangement of piping for the attachment of several sections of hose under test at the same time. The samples are attached vertically to the pressure pipe and enclosed in a sheet metal box to confine the water in case of a burst during the test. The outside diameters are calipered at the middle of the section to determine the expansion under 100 pounds.

FRICTION TEST.—There are various devices for holding the sample although the test is essentially the same. At the Long Island Railroad laboratory, at Long Island City, New York, the sample is suspended by attaching the free end to the arm of a ring-stand by a small screw clamp. The mandrel in the hose section is of wood, made tight fitting and provided with a small iron axis on which the test weight is hooked. [See Figure 1.] At the Baltimore and Ohio Railroad laboratory



the sample section is placed on an iron mandrel 6 or 8 inches long, supported in a pair of iron wall brackets and the test weight hooked to the free end of the sample. [See Figure 2.] The arrangement at the Pennsylvania Railroad test room consists of a bar several feet long provided with a series of ten stout hooks from which as many samples may be suspended and tested. The ring for this purpose is attached to the iron mandrel holding the test section, while to the free end is clamped a small hand vise, into the lower end of which the weight is hooked. [See Figure 3.]

STRETCHING TEST.—This test is credited to Mr. H. B. Hodges, purchasing agent of the Long Island railroad, who first suggested it as a means for determining the quality of the

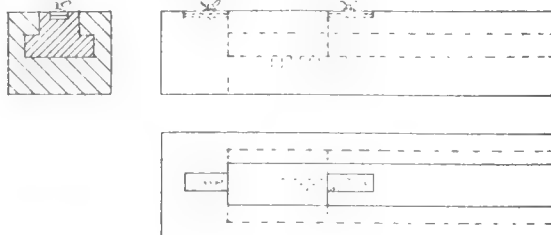


FIG. 4.

rubber and its degree of vulcanization, as shown by the strength and permanent set after test. The arrangement employed by the Pennsylvania railroad for holding the rubber strips under tension consists of a box-like contrivance of wood. This is made to hold one sample at a time, but it is proposed to modify it so as to stretch the samples in a removable frame which can then be set aside for ten minutes while other samples are being put under tension. [See Figure 4.] At the Baltimore and Ohio Railroad testing department, the rubber strip is attached at each end to a stout cord, one of these cords is then attached to a screw eye in a table top while the other is connected to the hook of a spring balance by which the amount of the pull can be ascertained.

VIBRATION TEST.—The air brake hose specification of the Chicago, Milwaukee and St. Paul Railway Co. provides:

One piece to be mounted on standard nipples, with ends rounded to prevent undue cutting of the tube, will be placed on vibrating machine. With a uniform air pressure of 60 pounds per square inch, the hose must not fail in less than 75 hours. The test on the vibrating machine is made as follows: One end of hose is held fast, the other end passing through a distance, vertically, of 14 inches, at the rate of 92 strokes per minute. A uniform air pressure of 60 pounds per square inch is maintained on the hose during test. [See Figure 5.]

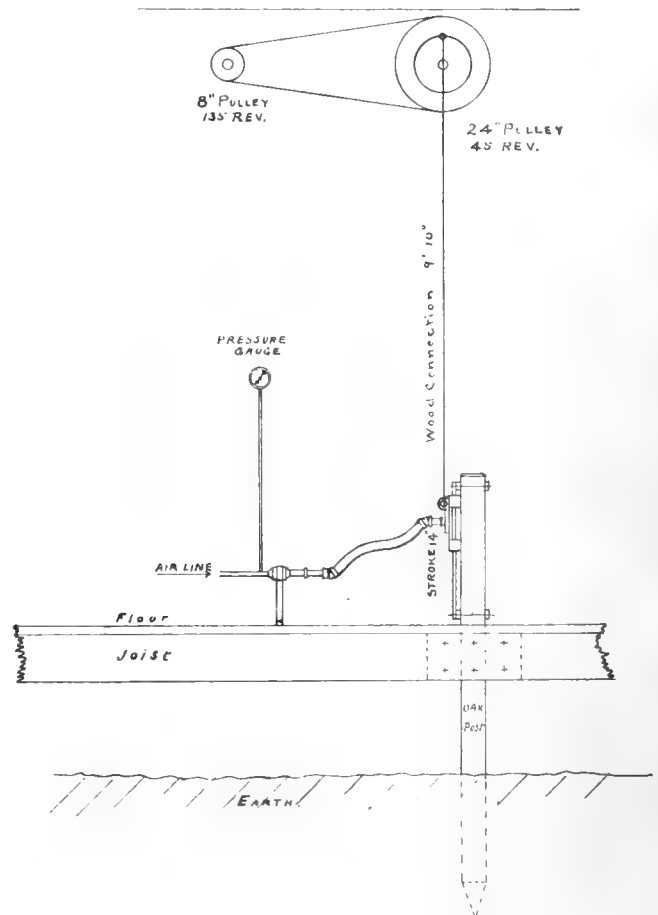


FIG. 5.

The vibrating test required on air brake hose by Swift & Co., of Chicago, is performed on a machine holding the hose (four at a time) vertically and with the lower end fixed working the upper end forward and back, at the rate of 70 strokes per minute.

The practical value of these vibrating tests is open to serious question. The conditions under which they are made are very unlike those of actual service, and the results are so extremely

erratic, even on hose of high quality friction, that it is safe to say that the test is regarded with less favor than any other. So far as known it is employed only by the Chicago, Milwaukee and St. Paul railway and Swift & Co. A far more reasonable flexibility or anti-kinking test is that requiring the 22 inch piece of $1\frac{1}{4}$ inch four-ply hose to admit of being doubled back upon itself till the ends are 16 inches apart, center to center, without kinking at the bend. Also the deflection test by measuring the deflection when a piece of hose firmly clamped is supporting 10 pounds, 10 inches from point of support.

Among the notable specification requirements on air hose should be mentioned those of the New York Central and Hudson River Railroad Co. which call for composite tube and cover—i. e., the tube is to be "formed with a complete inner tube of $\frac{1}{8}$ inch rubber, wrapped with a single wrapping of loosely woven 12 ounce cotton canvas, the whole being covered with an outer tube of $\frac{1}{8}$ inch thick rubber. . . . Cover must be made in composite form, in the same manner as provided for with the tube." Rubber $\frac{3}{32}$ inch is called for either side of the 12 ounce duck used in the cover. There is doubtless some advantage against wear and weathering in the composite structure of the cover, but hardly enough to compensate for the extra cost in making such a hose.

In the specifications issued by the Baltimore and Ohio Railroad Co. is an interesting attempt to express quantitatively the values of friction, tube and cover. It is done by a calculated summary figured from the data derived by the tests. As determined by this summary the "comparative figure," as it is termed, must be at least 400. The calculation is made as shown in the following example which is quoted from the specifications and illustrates an air brake hose that passes the specified requirements with 23.8 points to spare:

Friction.	Example.
In minutes up to 15 mins. $\times 10$	14 mins. $\times 10 = 140.0$
Tube.	
35 minus 1st permanent set	$35 - 12\frac{1}{2} = 22.5$
15 minus 2d permanent set $\times 10$	$15 - 4\frac{1}{2} \times 10 = 110.0$
Strength at beginning of 10 mins. $\div 100$	$200 \div 100 = 2.0$
Ultimate elongation $\div 100$	$450\% \div 100 = 4.5$
Ultimate strength $\div 200$	$650 \div 200 = 3.2$
Cover.	
35 minus 1st permanent set	$35 - 11\frac{1}{2} = 23.5$
15 minus 2d permanent set $\times 5$	$15 - 3\frac{1}{2} \times 5 = 60.0$
Strength at beginning of 10 mins. $\div 100$	$300 \div 100 = 3.0$
Ultimate elongation $\div 100$	$500 \div 100 = 5.0$
Ultimate strength $\div 200$	$625 \div 200 = 3.1$
50 minus % drop in strength of cover (during 10 mins. under 450% stretch.)	$50 - 4\frac{1}{2} = 45.5$
	423.8

The entire calculation is purely empirical and the factors are arbitrarily selected and applied with the evident intention of emphasizing certain of the tests known to give high results in proportion to the quality of the rubber stock employed in making the hose. The principal points thus markedly influencing the final "comparative figure" are the friction, the permanent set of tube and cover, and the percentage of drop or reduction in strength of cover when under strain for ten minutes.

It is stated that, as a result of these specifications, the life of air brake hose on the Baltimore and Ohio has increased from about 12 months for regular brands to about 24 months for specification goods. If this be so, there would seem to be no pecuniary advantage in paying high prices for specification goods over medium priced regular brands with 24 months guarantee.

[CONCLUDING PAPER NEXT MONTH.]

AN OLD SCHEME UNDER A NEW NAME.

THERE has been widely distributed of late a printed sheet with the heading *Financial Topics*—Vol. I, No. 1; December, 1903. It purports to be issued from—

Room 717, Exchange Court Building, New York.

The contents of the paper are devoted mainly to advertising the "International Rubber and Trading Co.", the address of which is stated to be—

No. 52 Broadway, New York.

Now it happens that these two addresses lead to one and the same building. The latter address leads to the rooms occupied by the late "Pará Rubber Plantation Co." The first leads to a room on a lower floor, occupied by Mr. Jack Merrill, whose versatility in advertising the shares of this company has been mentioned hitherto in THE INDIA RUBBER WORLD. Which would suggest that a certain investment scheme, no better than it ought to be, is being conducted under a new name.

There is also being distributed a pamphlet prospectus, bearing on the cover the name "International Rubber and Trading Co.", but filled inside with reading matter very similar to the prospectuses of the old Pará Rubber Plantation Co. There is a familiar picture—a view of the rubber warehouse of Messrs. Witt & Co., at Manáos, but used in this instance as if to illustrate "Packing Rubber for Shipment" on the Casiquiare property. The picture was derived from THE INDIA RUBBER WORLD, by the way, and is used without respect for our copyright.

There is not space here for a lengthy review of this prospectus. But it is strongly advised that, before investing in the company's shares, any one interested should investigate the truth of the assertion (on page 13):

That there exist the best possible facilities for transportation. The Amazon river is navigable for ocean steamers to Manáos, just above the junction of the rio Negro and Amazon rivers. From Manáos, the rio Negro is navigable to a point of conjunction with the Casiquiare river. The latter joins the rio Negro river with the Orinoco river which, with a Decoville railway at the Delta, is navigable to the Carribean sea. The Casiquiare river is navigable at all seasons of the year, and no difficulty whatever is to be encountered in bringing out the product of the region contiguous to it.

The "Decoville railway" should prove especially interesting.

We are in possession of a letter dated December 3, 1903, and signed by M. Doud as secretary of the International Rubber and Trading Co., stating:

The Company has contracted to deliver a large quantity of rubber in the next ninety days, and will have no difficulty in marketing all that it can produce, at a large margin of profit.

According to this, the trade should be prepared, about March 2, to see so much rubber thrown upon the market as to depress prices below all records. Anything like stability in crude rubber prices is maintained nowadays only by the free exchange of information regarding stocks. But a \$10,000,000 trading company that holds up its sleeve—or up the Casiquiare river—an indefinite large supply of rubber, about which it refuses any information, could play havoc with the market any day. It will be time to feel concern about this March rubber, however, when it reaches the market.

ASBESTOS IN CANADA.—The following figures, from an official source, indicate the value of the production of Canadian asbestos, in calendar years:

1881.....\$ 35,100	1892....\$999,873	1901.....\$1,259,759
1886..... 206,251	1896..... 429,350	1902..... 1,191,328

The larger proportion of the asbestos exports are to the United States.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

I CANNOT say that my eye noticed anything particularly novel at the Stanley and National cycle shows, held as usual in London at the end of November. That is, with regard to the applications of rubber. Old friends were there in abundance, with one or two conspicuous absentees, and the rubber trade was rather more strongly represented than in some recent years. At the National show at the Crystal Palace, The North British Rubber Co. were to the fore with the Bartlett-Clincher tire. At the large exhibit of the Dunlop Pneumatic Tyre Co. was shown the new non slipping cover which consists of longitudinal ridges reinforced by transverse projections which prevent the ridges playing apart and quickly wearing off. These transverse projections form the words "Dunlop Tyre," and thus serve the double purpose of utility and at the same time of affording a means of identification. Motor garments formed a prominent feature of the Dunlop exhibit. The Scottish Tyre, Limited, of Glasgow, showed their "Scottish de Luxe," "Scottish Victor" and "Edinburg" beaded edge tires. The alliterative motto used by this company, viz.: "Pure Pará prevents puncture," may possibly be challenged as to its accuracy; it certainly would not be fair to take it as true in all respects, because it would imply that in cases where puncture has occurred rubber other than Pará must have been used. To judge by the references to the use of "Pará rubber only" which occur consistently in all tire makers pamphlets it may be taken that the existence of inferior brands is practically unknown, though of course the statements that "our tires" are made of fine Pará throughout may be read as a warning that this is not the case with competitors' makes. Other firms exhibiting at the Crystal Palace were the Martin Tyre Co., and the Dawson tire, shown by the inventor, Mrs. Dawson, of Southport, Lancashire. This consists of a woven cord band prepared with solution to fill up all the crevices and having a rubber strip placed on the band. The Williams Patent Tyre Co. are concerned with the exploitation of Williams's patent adjustable band and fastenings by the use of which it is claimed that immunity from side slip is secured.

Turning now to the Stanley show, at the Agricultural Hall, it may be mentioned that the following well known rubber manufacturers had their goods on show: David Moseley & Sons, North British Co., Dunlop company, Avon Rubber Co., Midland Rubber Co., Reddaway & Co., W. & A. Bates & Co., Capon, Heaton & Co. and the Continental Rubber Co. As far as I could see there was no particular novelty shown by any of the above, improvements and developments being the order of the day. Messrs. Moseley had a special exhibit in the gallery for the Black Tyre Co. of Glasgow. The Lovelace patent anti-slipping tread was shown by the Avon Rubber Co., the sole manufacturers. The Clifton Rubber Co. announce that the various legal suits which have hindered their progress in the past have all been satisfactorily settled and that users of their "Wapshare" and "Clifton" tires need have no fear of any question of infringement being raised. This company, is located at Lower Priory, Birmingham. Clipper and Palmer tires formed a bold show, these firms catering specially for the motor cyclist. As is well known the Clipper-Continental tyres are made at the Continental company's works at Hanover. In connection with their motor tires this company emphasises the necessity of fitting a car with tires of the requisite strength for the

weight they have to support. The pamphlet issued by the Continental Co. and entitled: "Clipper-Continental Tyres—How to Treat and Repair Them," is replete with useful information and should prove highly popular. The Le Pâris racing tyres can claim 90 per cent. of the classic road races of the past season and the company is naturally somewhat jubilant over the fact. The Le Cuirasse non slipping band is supplied in red or black rubber and is stated to be unpuncturable and everlasting, though if it is made of rubber the latter statement seems a somewhat bold one. This company has its location at 20, Kirby street, Hatton garden, London, E. C. Beyond the Continental, the only other foreign firm that caught my eye was the Fulda Rubber Works Co., Ltd., which together with the Aschaffenburg Celluloid Co. was represented at the exhibit of the Norton Folgate Rubber Solution Co. One of the boldest claims made at the show emanated from Stand 287, where the Azulay patent horse hair tire was exhibited. It is stated that it is the nearest approach to a non puncturable tire ever offered to the public, and that it will revolutionize the cycle trade. Though I have no reason whatever to be sceptical on the matter, I shall look with interest for reports from riders. The tires are to be obtained from Mr. Leon Azulay, Southwick, Sussex.

THE business in rubber heel pads has rapidly advanced to one of importance, among others who are turning out large quantities being the Liverpool Rubber Co. and the Hyde Rubber Co. A recent estimate puts the number sold at 30,000 a week, which is probably not far from the mark, seeing how popular they have become with all classes. Various reasons have been adduced for this popularity, but those who have given publicity to their views seem to have overlooked the question of ultimate economy to the wearer. So many people rapidly wear down the heels of their boots that they find the shilling or so expenditure on a rubber pad to save them considerably more than this sum in cobbler's bills. It is claimed for the rubber aluminium pads sold at 138, High Holborn, London, that by this make the tendency to slip on greasy pavements is overcome, though I am not aware of any statistics showing the defects of the plain rubber pad in this direction. The O'Sullivan silent tread heels are being sold by The B. F. Goodrich Co. at 7, Snow Hill, London, E. C. A point which is not without some importance is the capability of the retail bootmaker or working cobbler to put the rubber heels on properly. Naturally, any one may say the majority of these men know little or nothing about rubber and the various ways of attaching it to leather, and many complaints which have arisen are attributable to ignorance in this direction rather than to any defect in the rubber itself.

IN the course of a recent conversation with Mr. W. F. Reid, the inventor of Velvril, I was informed that this product is making steady progress in public estimation, though I gathered that the makers have largely modified their claims as to Velvril being a substitute for India-rubber. It is in the direction of a cheap substitute for leather that it is being used, in decorative work generally. There is also a demand for it in the upholstering of motor cars. That there is a growing market for material of this sort is evidenced by the progress being made by the Pluviusin Co., of Monton, near Manchester, and by the success of the Pegamoid company. This concern is by no means dead as is supposed by

THE
CYCLE
SHOWS.RUBBER
HEEL PADS.ARTIFICIAL
LEATHER.

many to be the case since the upsetting of the patent by Mr. Justice Joyce. On the contrary, it has taken a new lease of life in its works near London, though a modification is perceptible in the extravagant claims made for the product in the days of its first announcement to the world. The recently issued report of New Pegamoid states that in spite of the cessation of the large government orders due to the South African war steady progress is being made, a dividend of 8 per cent. being available for distribution.

SOME rubber manufacturers, more especially those whose business is practically confined to one class of goods, have been anxiously debating within themselves as to whether the expenses incurred in the employment of a regular traveler are really justified, or whether just as satisfactory results could not be obtained by means of postal communication alone. Of course it would be difficult to speak generally on the matter; it is one for each to decide for himself with the facts and figures at his disposal. As a manufacturer there is much uncertainty about the progress of a traveler; on one journey he may get satisfactory interviews with customers and justify his appointment. Next time he may find that he has been preceded by a rival and that there are no orders to give away, or the buyer is engaged and cannot see him that day. Next time, perhaps, he is more fortunate. Thus the cycle goes on, the result being that at the end of the year the traveler has made his expenses. These expenses of course have to come out of the price charged for the goods, and it has occurred to some that this extra cost might be taken off the goods if they were offered by the post. The buyer would at once see the advantage in price and this might do more in persuading him to give his orders than would the persuasive eulogies of the traveler offering the same goods at a higher price. As I have said, it is a matter for each to decide for himself, but it seems of sufficient interest to make a reference to it.

THE Board of Trade Report on South African trade contains one or two remarks of interest to our industry. Rubber goods are mostly obtained from England, but there is a tendency, especially among American mining engineers, to give preference to the manufacturer of the States for mechanical goods. American goods are said to owe their superiority to attention to small details and the British manufacturer is exhorted to act on similar lines if he would stem the threatened loss of his prestige. With regard to the requirements of the mining engineer, I referred in a recent issue to the fact of the rubber belts for Frue vanners being mainly supplied from America and I suggested that British manufacturers might look into this matter. Events, however, move rapidly in mining and I hope I shall not be accused of any underhand motive if I say that the Frue vanner with its rubber belt bids fair to be more and more displaced by the Wilfley concentrator. In this machine the buddling surface consists of linoleum, this material having been selected as the best after a long series of experiments, in which wood, rubber, marble, slate, and numerous metals were tried. I am not here advertising the merits of any particular form of concentrating table, but it seems important to say that recent events go to show that the amount of rubber used in mining machinery may decrease rather than increase.

It would seem that the prominent position of the Dunlop company as litigants in the courts is to be sustained right up to the lapsing of the patents, a date which is now rapidly approaching. The recent action against Messrs. Moseley failed because the judge held that the manufacture and sale of outer covers alone was not an in-

fringement. In another case versus the North British Rubber Co. the Dunlop company were not more fortunate. This somewhat complicated action had to do with the arrangement come to between the North British Co. and Michelin of Clermont-Ferrand for the latter to manufacture the clincher motor tire for sale by the former in England. The arrangement certainly caused some little surprise when it was announced about a year ago, because it seemed to amount to a confession by the North British that their own manufacture was not up to the mark. In connection with some remarks on the Dunlop patents a London financial paper says: "We are not sure it will not be a good thing for the company to be relieved of the necessity for constant litigation which the protection of its patents has involved and in future have to rely entirely on excellence of manufacture and superiority of workmanship." Apart from litigation troubles it is satisfactory to see from the recent balance sheet how the earnings and prospects of the company have increased.

I HAD the pleasure in November of meeting Mr. Pearson in London, and I take the present opportunity of conveying to those British manufacturers whom Mr. Pearson had no time to call upon, his regret that the time at his disposal in England was too short to enable him to renew old friendships or to add to the list of subscribers with whom he has personal acquaintance. I am sure that those members of the trade who have experienced our editor's hospitality and attention when in the States will regret that his brief stay in England allowed only of a stoppage in Liverpool and London, and the more prolonged visit to our shores which he proposes to make at no distant date will doubtless be anticipated with pleasure. Mr. Pearson is at present in Ceylon and proposes to return to the States via Japan on the completion of his tour.

DEMAND FOR AUTOMOBILE TIRES.

UNDER the new law in New York state licensing automobiles and requiring each to be tagged with a number, about 8800 machines have been registered, of which number it is estimated that one half are owned in New York city. There is no city office, by the way, for the registry of automobiles. To take this state alone, an idea of the great expenditure for automobile tires may be gained. The report of the 500 mile reliability contest, between New York and Boston, in October, 1902, indicated \$35 each as the average retail price of the tires on the automobiles entered. An official of the Automobile Club of America, under whose auspices the contest was made, estimates that the average pleasure car now in use in the United States requires six tires per year. Applying this estimate, and the above price of tires, to the number of automobiles registered in New York state, a yearly expenditure of \$1,848,000 for tires would be required. But the above list includes many heavy commercial vehicles, requiring heavier and more expensive tires than were entered in the New York-Boston contest, so that the expense for tires is probably nearer \$2,000,000.—On March 23, 1903, an automobile licensing act went into effect in New Jersey, and on December 15 it was reported that 4287 machines had been licensed in that state. In Connecticut, 1343 automobiles have been registered, and in Massachusetts 3714, of which 500 are motor cycles. It is understood, of course, that some of these figures are duplicates, the same vehicle being registered in two states. A recent statement was to the effect that 1700 automobiles were owned in the city of Chicago. There certainly must be as many more automobiles in the remaining forty states.

OFFICIAL STATISTICS OF INDIA-RUBBER AND GUTTA-PERCHA.

For the United States Fiscal Year Ended June 30, 1903.

INDIA-RUBBER.

I.—Imports of Crude India-Rubber, by Countries.

FROM—	Pounds.	Value.
<i>Europe:</i>		
Belgium.....	5,338,674	\$3,337,766
France.....	379,635	229,064
Germany.....	2,916,814	1,445,698
Netherlands.....	390,865	162,383
Portugal.....	2,009,455	1,053,900
United Kingdom.....	9,714,597	5,616,827
Total.....	20,710,040	\$11,855,638
<i>North America:</i>		
British North America.....	11,421	\$ 5,464
Central America.....	1,083,351	542,954
Mexico.....	251,776	97,542
Other North America.....	15,609	6,247
Total.....	1,382,157	\$652,257
<i>South America:</i>		
Brazil.....	31,119,486	\$17,218,519
Colombia.....	455,909	176,568
Ecuador.....	681,136	296,031
Peru.....	210,899	105,622
Other South America.....	15,828	7,437
Total.....	32,483,318	\$17,804,077
<i>Asia and Oceania:</i>		
East Indies—British.....	454,594	\$124,575
All other.....	462	183
Total.....	455,056	\$124,758
GRAND TOTAL.....	53,010,571	\$30,436,710
Total, 1901-02.....	50,413,481	24,899,230
Total, 1900-01.....	55,275,529	28,455,383
Total, 1899-00.....	49,377,138	21,376,867
Total, 1898-99.....	51,063,066	31,707,620
Total, 1897-98.....	46,055,497	25,386,010
Total, 1896-97.....	35,574,449	17,457,976
Total, 1895-96.....	36,774,460	16,603,020
Total, 1894-95.....	39,741,607	18,353,121
Total, 1893-94.....	33,757,783	15,077,933
Total, 1892-93.....	41,547,680	17,809,239
Total, 1891-92.....	39,976,205	19,718,216

II.—Imports of Crude India-Rubber, by Customs Districts.

At—	Pounds.	Value.
Boston.....	1,674,196	\$ 853,325
New York.....	52,770,004	29,284,547
Philadelphia.....	510	128
New Orleans.....	433,088	255,466
San Francisco.....	61,782	20,743
Other ports.....	70,991	22,601
Total.....	55,010,571	\$30,436,710

III.—Imports of Manufactures of India-Rubber, by Countries.

[+ Indicates increase; — indicates decrease.]

FROM—	Value.
Austria-Hungary.....	\$ 6,695+
Belgium.....	55,532+
France.....	129,634+
Germany.....	308,551+
Italy.....	554+
Netherlands.....	1,236—
Russia.....	28,361+
United Kingdom.....	132,768+
Other Europe.....	36—
British North America.....	2,132—
Other countries.....	475—
Total, 1902-03.....	\$665,972—
Total, 1901-02.....	449,756
Total, 1900-01.....	478,663
Total, 1899-00.....	564,083
Total, 1898-99.....	379,309
Total, 1897-98.....	309,247
Total, 1896-97.....	297,553
Total, 1895-96.....	294,228
Total, 1894-95.....	315,902
Total, 1893-94.....	309,308
Total, 1892-93.....	338,435

INDIA-RUBBER.

IV.—Imports of Manufactures of India-Rubber, by Customs Districts.

At—	Value.
Boston and Charlestown.....	\$ 78,652
New York.....	517,774
Philadelphia.....	11,036
Other Atlantic ports.....	15,606
New Orleans.....	1,824
Other Gulf ports.....	508
San Francisco.....	10,839
Other Pacific ports.....	1,204
Northern and lake ports.....	25,793
All other ports.....	2,736
Total.....	\$665,972

V.—Exports of Manufactures of India-Rubber (and Gutta-Percha), by Customs Districts.

FROM—	Belting, Packing, and Hose.	Boots and Shoes.	Other Rubber Goods.
Baltimore.....	\$ 1,368	\$ 2,074	\$ 1,089
Boston and Charlestown.....	16,888	538,254	324,358
New York.....	489,164	413,826	1,269,313
Philadelphia.....	2,705	897	103
All other Atlantic.....	4,422	1,419	760
Arizona.....	13,908	1,018	12,780
Corpus Christi.....	.....	.....	30,007
Paso del Norte.....	23,537	.....	57,723
Saluria.....	20,594	4	14,088
Alaska.....	18,553	19,472	7,137
Puget Sound.....	14,855	17,309	14,921
San Diego.....	788	304	228
San Francisco.....	123,781	44,339	110,458
Buffalo Creek.....	.....	.....	80,065
Champlain.....	1,879	.....	90,210
Detroit.....	19,056	74	33,393
Memphremagog, Vt.....	13,894	2,028	18,700
Niagara.....	.....	.....	127,894
Vermont, Vt.....	25,983	10,090	68,488
Other N. border, etc., ports.....	19,443	5,191	42,644
Total.....	\$819,985	\$1,056,491	\$2,299,875

GUTTA-PERCHA.

I.—Imports of Crude Gutta-Percha, by Countries.

FROM—	Pounds.	Value.
France.....	3,322	\$ 3,387
Germany.....	161,910	87,204
Netherlands.....	380	825
United Kingdom.....	115,180	90,804
Central America.....	478	273
Other North America.....	1,472	530
East Indies—British.....	25,274	35,408
Other lands.....	1,309	1,112
Total, 1902-03.....	316,290	\$222,400
Total, 1901-02.....	525,767	252,329
Total, 1900-01.....	280,560	130,957
Total, 1899-00.....	427,678	178,616
Total, 1898-99.....	518,939	167,577
Total, 1897-98.....	636,477	159,381

GUTTA-JULETONG (PONTIANAK).

United Kingdom.....	53,909	\$ 2,897
East Indies—British.....	13,930,908	342,534
Total, 1902-03.....	13,984,817	\$345,431
Total, 1901-02.....	16,850,821	501,418
Total, 1900-01.....	9,371,087	248,838

NOTE.—About 84 per cent. in volume and 95 per cent. in value of the Gutta-percha imported arrived at New York, and the remainder principally at Boston. Of the Pontianak, 13,895,554 pounds arrived at New York and 89,273 pounds at San Francisco.

Imports of Crude Gutta-percha for earlier years are not given, for the reason that the customs returns then included under this head Balata, Pontianak, etc.

GUTTA-PERCHA.

II.—Imports of Manufactures of Gutta-Percha, by Countries.

FROM—	Value.
Belgium.....	\$ 10,176
Denmark.....	23
France.....	6,604
Germany.....	83,286
Sweden, Norway.....	287
United Kingdom.....	124,813
Other countries.....	9
Total, 1902-03.....	\$225,198
Total, 1901-02.....	127,780
Total, 1900-01.....	163,337
Total, 1899-00.....	254,332
Total, 1898-99.....	115,582
Total, 1897-98.....	166,997
Total, 1896-97.....	97,194

NOTE.—Of the above imports, \$117,764 worth was entered at Pacific ports.

RUBBER SCRAP.

Quantity and Value of Imports, by Countries.

FROM	Pounds.	Value.
Belgium.....	338,912	\$ 20,364
France.....	531,632	38,223
Germany.....	8,290,900	517,483
Netherlands.....	1,860	283
Russia—Baltic.....	7,219,680	438,842
—Black Sea.....	3,235,217	181,484
Sweden, Norway.....	585,022	35,917
Turkey in Europe.....	316,606	19,331
United Kingdom.....	1,851,168	123,109
British North America.....	2,216,891	137,183
Central America.....	165	27
Mexico.....	16,414	479
Other North America.....	55,507	3,412
Total, 1902-03.....	24,659,194	\$1,516,137
Total, 1901-02.....	22,894,900	\$1,437,960
Total, 1900-01.....	15,235,236	988,316
Total, 1899-00.....	19,093,547	1,249,231
Total, 1898-99.....	10,513,604	462,014

NOTE.—For information regarding imports under this heading, readers are referred to the article on "The World's Trade in Waste Rubber," in THE INDIA RUBBER WORLD, March 1, 1903 (page 196), giving details back to 1893, together with an analysis of the real sources of the material imported.

RECLAIMED RUBBER.

Exports of Reclaimed Rubber, by Countries, for Four Years.

To—	Value, 1899-00.	Value, 1900-01.	Value, 1901-02.	Value, 1902-03.
Austria-Hungary.....	\$8,496	\$..	\$ 50	\$ 481
Belgium.....	1,207	703	1,250	1,084
France.....	2,276	13,220	38,310	13,932
Germany.....	56,263	48,419	20,191	19,425
Italy.....	16,119	17,604	12,291	11,284
Netherlands.....	2,923	2,734	6,550	9,049
Denmark.....	.....	.....	2,809	.....
Russia.....	2,033	575	.....	418
Spain.....	.....	.....	5,552	1,774
Sweden-Norway.....	6,149	10,103	18,318	215,904
Great Britain.....	125,902	295,409	820,844	129,216
Canada.....	259,416	200,422	143,276	1,368
Mexico.....	9,226	1,072	42	.....
Japan.....	2,214	2,830	175	85
Australia.....	.....	.....	.....	566
Other lands.....	60	442	40	.....
Total.....	\$492,284	\$642,093	\$569,698	\$404,586

[Exports, 1896-97, \$119,440; 1897-98, \$257,639; 1898-99, \$376,962.]

EXPORTS OF AMERICAN RUBBER GOODS.

FISCAL YEAR ENDED JUNE 30, 1903.

EXPORTED TO—	Belting, Packing, and Hose.	Boots and Shoes.		Other Goods Value.	Total Value.
		Pairs.	Value.		
EUROPE :					
Austria-Hungary.....	\$ 811	7,766	\$ 2,755	\$ 6,180	\$ 9,746
Azores and Madeira.....	67	440	736	81	887
Belgium.....	4,313	67,547	22,828	42,596	69,737
Denmark.....	2,899	19,316	7,879	6,055	16,833
France.....	13,168	291,247	108,971	80,085	202,222
Germany.....	29,900	289,777	106,152	148,170	284,222
Gibraltar.....	497	...	...	28	525
Italy.....	1,766	22,036	10,826	59,638	72,224
Netherlands.....	1,836	25,238	10,273	44,680	56,769
Norway.....	3,795	6,733	3,347	6,217	12,359
Portugal.....	75	30	70	2,342	2,487
Roumania.....	...	105	26	...	26
Russia.....	5,687	...	...	3,177	8,864
Spain.....	750	63,154	27,446	5,093	33,280
Sweden.....	1,747	1,722	754	8,991	11,192
Switzerland.....	849	13,286	6,183	1,971	8,003
Turkey in Europe.....	...	57,031	23,672	686	24,358
United Kingdom.....	86,690	1,026,582	460,954	873,085	1,420,709
Total, Europe.....	\$154,814	1,891,009	\$791,872	\$1,287,756	\$2,234,442
NORTH AMERICA :					
Bermuda.....	\$ 951	170	\$ 87	\$ 613	\$ 1,651
British Honduras.....	349	312	144	76	563
Nova Scotia, New Brunswick, Quebec, Ontario, etc.....	13,322	16,442	29,139	6,673	40,134
British Columbia.....	94,367	47,078	43,137	458,088	595,592
Newfoundland, Labrador.....	32,245	8,740	17,054	17,012	66,241
Costa Rica.....	4,603	14,705	12,465	1,064	18,132
Guatemala.....	3,746	178	60	5,042	8,948
Honduras.....	2,695	60	28	695	3,288
Nicaragua.....	2,411	...	...	194	2,605
Salvador.....	3,615	12	21	765	4,401
Mexico.....	1,333	...	...	418	1,751
Miquelon, Langley, etc.....	116,035	3,176	2,609	100,325	308,969
West Indies—British.....	207	4,648	4,345	20	4,572
Cuba.....	4,396	787	297	6,731	11,524
Danish.....	32,797	2,351	2,210	73,789	108,793
Dutch.....	465	...	...	201	666
French.....	125	36	15	465	605
Haiti.....	60	...	...	110	170
Santo Domingo.....	614	60	57	399	1,068
Total, North America.....	2,472	1,246	493	751	3,716
SOUTH AMERICA :					
Argentina.....	\$13,985	398	\$ 186	\$ 8,007	\$ 22,178
Brazil.....	1,747	3,535	1,882	18,428	22,057
Chile.....	7,467	187	350	5,693	13,510
Colombia.....	6,679	3,831	1,370	3,421	11,470
Ecuador.....	12,699	222	100	1,351	14,650
Guianas—British.....	412	1,283	540	620	1,572
Dutch.....	600	...	...	537	1,137
French.....	...	2	3	...	3
Peru.....	3,665	180	180	7,104	10,939
Uruguay.....	28	72	35	1,119	1,182
Venezuela.....	1,631	404	130	3,715	5,476
Total, South America.....	\$ 48,303	10,104	\$ 4,776	\$ 57,696	\$104,174
ASIA :					
Chinese Empire.....	\$ 5,729	3,628	\$ 1,658	\$ 7,186	\$ 14,573
China—Russian.....	...	...	...	245	245
East Indies—British.....	2,094	1,594	1,127	8,428	11,649
Dutch.....	79	...	...	476	555
Hong Kong.....	1,947	91,942	29,126	10,319	41,392
Japan.....	42,922	46,629	28,558	87,620	159,100
Korea.....	1,839	...	...	405	2,244
Russia, Asiatic.....	...	...	...	135	135
Turkey in Asia.....	230	8,400	3,657	99	3,986
Total, Asia.....	\$ 64,840	152,193	\$ 64,126	\$114,913	\$233,879
OCEANICA :					
British Australasia.....	\$ 98,463	134,570	\$ 77,778	\$ 57,196	\$933,436
British Oceania.....	10	...	...	8	18
French Oceania.....	2,376	233	152	857	3,385
German Oceania.....	...	...	...	253	253
Philippine Islands.....	20,692	2,275	2,396	35,773	58,861
Total, Oceania.....	\$121,541	137,078	\$ 80,326	\$94,086	\$295,953
AFRICA :					
British Africa—West.....	\$ 306	136	\$ 140	\$ 33	\$ 479
South.....	82,402	16,723	11,682	15,855	109,939
Canary Islands.....	...	...	...	36	36
Liberia.....	...	1	3	3	6
Portuguese Africa.....	751	...	...	345	1,096
Turkey in Africa—Egypt.....	...	2	6	...	6
All other Africa.....	9,750	144	301	2,901	12,952
Total, Africa.....	\$ 93,209	17,006	\$ 12,132	\$ 19,173	\$124,514
GRAND TOTAL 1903.....	\$819,985	2,307,401	\$1,056,491	\$2,299,875	\$4,176,351
Grand Total, 1902.....	634,14	2,594,708	1,046,315	1,781,941	3,462,402
Grand Total, 1901.....	565,726	1,459,100	724,015	1,727,527	3,017,268
Grand Total, 1900.....	541,830	767,104	420,746	1,405,212	2,367,788
Grand Total, 1899.....	(a)	496,586	260,886	1,504,499	1,765,385
Grand Total, 1898.....	(a)	391,832	224,705	1,499,157	1,723,862
Grand Total, 1897.....	(a)	306,026	195,499	1,611,646	1,807,146
Grand Total, 1896.....	(a)	350,713	216,657	1,642,499	1,859,155
Grand Total, 1895.....	(a)	383,793	225,986	1,279,156	1,505,142
Grand Total, 1894.....	(a)	261,657	155,011	1,306,831	1,461,842

a—Included in "Other Goods" before 1899.

LITERATURE OF INDIA-RUBBER.

THE CEYLON HANDBOOK AND DIRECTORY AND COMPENDIUM OF Useful Information for 1903-04, to which is appended a Review of the Planting Enterprise and Agriculture of the Colony. Compiled and Edited by J. Ferguson, Editor of the *Ceylon Observer*, *Tropical Agriculturist*, etc. Colombo: A. M. & J. Ferguson, 1903. (Cloth, 8vo. Pp. ix, 1178-1179; folding tables, maps, and advertisement pages. Price, 10 rupees.)

THE important attention which rubber culture has received of late in Ceylon, and the results attained, renders of interest any authentic information regarding planting conditions in that colony. It would hardly be possible for any information to be sought in relation to Ceylon planting which is not contained in this bulky and closely printed, concisely written volume, which forms the twenty-sixth annual issue, under the same management. In effect, it is a directory of every plantation on the island, with details of its management, and a statement of the acreage devoted to each product. There is information also regarding general conditions on the island—government, laws, history, trade, transportation, and industry, as well as planting. There is a summary of progress in rubber planting, and results to date, together with details of every estate on which such planting has been undertaken. Not only is the work so complete, but it bears ample evidence of being trustworthy, and the publishers are to be commended for the enterprise and public spirit which have induced them so long to maintain this publication.

THE London *India Rubber Journal* has issued its fourth "Diary and Year Book," containing pages for memoranda for each business day during 1904, together with a printed section containing much trade and statistical data of use to the rubber branch in Great Britain, conveniently arranged for reference. The yearly editions of this work have shown continuous improvement, and the publishers express their pleasure at the steady growth in the appreciation shown by their patrons.

IN CURRENT PERIODICALS.

NEUE Kautschukbäume aus Neucaledonien [*Alstonia Dürckheimiana*, Schlechter]. By Rudolf Schlechter. = *Der Tropenpflanzer*, Berlin. VII-11 (November, 1903). Pp. 526-530.

Le Première Récolte du Caoutchouc sur les *Hevea* de la Plantation Soebang (Pamanoean et Tjassemlandeu). By H. C. Dinot [Resume of a paper in *Teysmania*, Batavia, No. 8, 1903.] = *Revue des Cultures Coloniales*, Paris. XIII-137 (November 20, 1903). Pp. 308-310.

Bericht over Para Caoutchouc. [Exhaustive report by R. Dupont, curator of the botanic station in the Seychelles islands, regarding rubber cultural conditions in general, and results of first experiments in that locality, principally with *Para* rubber.] = *De Indische Mercur*, Amsterdam. XXVI-47 (November 24, 1903). Pp. 798-799.

L'Expédition de Monsieur E. Ule dans la Région Caoutchoutifère de l'Amazonie. By É. D. W. [ildman]. = *Revue des Cultures Coloniales*, Paris. XIII-138 (December 5, 1903). Pp. 336-337.

Le Manicoba ou *Manihot Glaziovii*. [Instructions for its culture, extraction of the latex, and the preparation of rubber; translated from an official publication by the government of Bahia, Brazil.] = *Revue des Cultures Coloniales*, Paris. XIII-138 (December 5, 1903). Pp. 343-346.

La Culture du *Castilloa* au Mexique. [Review of "Rubber Planting on the Isthmus of Tehuantepec," by Henry C. Pearson.] = *Journal d'Agriculture Tropicale*. III-29 (November 30, 1903). Pp. 338-340.

THE rubber man is a recent arrival in town. His stock consists of two bags, one of which is filled with penny toys. Taking a position in front of a school house at the noon hour, he shows his goods to the children and tells them to bring from home anything composed of rubber and receive a toy in exchange. Old rubber shoes, mackintoshes, water bags, all sorts of things made of rubber, are exchanged after lunch, and the man departs with a load of rubber and the satisfaction, no doubt, of having had the best end of a lot of small bargains.—*The Evening Post* (New York).

RUBBER NOTES FROM EUROPE.

MOTOR TIRES FOR ENGLAND MADE IN FRANCE.

A DECISION has been rendered in the English courts in *re* Dunlop Pneumatic Tyre Co., Limited, *v.* North British Rubber Co., Limited. The former company purchased from the latter, in 1896, for £200,000, the Bartlett patent, under which they had manufactured the "Clincher" tire. At the same time the Dunlop company licensed the North British company to continue the manufacture of the "Clincher" tire, under said patent, on the payment of a royalty of 5 shillings per pair, but stipulating that the North British company should not manufacture any tire which might infringe the Welsh patent, also owned by the Dunlop company. In January, 1903, the North British company entered into an agreement with Michelin et Cie. (Clermont-Ferrand, France), whereby the latter should manufacture such "Clincher" motor tires as the North British Rubber Co. might require for their trade in Great Britain. The French company were not to supply such tires to any other firm in Great Britain, and the North British company were not to have such tires made by any other company, though reserving the right to make in their own works not more than 5000 tires per year. The tire so produced was labelled "The Clincher-Michelin Tyre, Bartlett's patent."

The plaintiffs in this case charge the North British Rubber Co. with violation of the terms of their license in subletting the license to Michelin et Cie. The court, however, held that in this transaction Michelin et Cie. were merely agents of the North British Rubber Co., who are, in the eye of the law, the manufacturers of "Clincher-Michelin" tires; there had been no assignment of the license held from the Dunlop company. As to the second point involved—the claim that the tires so made had, by the inclusion of features not in the original "Clincher" tire, infringed the Welsh patent—the court held that further evidence would have to be presented.

A GOOD YEAR FOR THE DUNLOP COMPANY.

THE Dunlop Pneumatic Tyre Co., Limited, have been able to present to their shareholders, for the seventh business year, the most favorable report for some time past. Despite the continued decline in the price of tires, and the liberal writing off of their patent accounts, the company were able during the year to retire debentures amounting to £132,000, to increase the dividend on ordinary shares from 5 to 6 per cent., and carry forward a balance larger than last year's by £57,519 5s. 1d. The financial statement for the fiscal year ended September 30, 1903, may be thus summarized:

Dr.

Carried forward, September 30, 1902..	£177,922	0	0
Profits from trading, 1902-03.....	145,468	9	11
Income from investments*.....	84,540	19	3
	£407,921	9	2

Cr.

Interest on debentures.....	£17,270	0	0
Preference dividends—10 per cent....	49,749	10	0
Ordinary dividends—6 per cent....	59,999	11	7
Written off patents account.....	45,371	2	6
	£172,390	4	1

Carried forward, September 30, 1903..... £235,541 5 1

[* Including subsidiary companies.]

The directors report: "With regard to the quality of the automobile tires manufactured by the company, a great deal of interested misrepresentation has taken place. The efforts of the directors to safeguard the patent rights of the shareholders conflict with the large importation of automobiles fitted with tires made abroad. Users do not always understand that motor tires made in Germany and France are manufactured according to purely English inventions (the property of your

company) but which are not recognized in Germany or France. Such tires, when improperly imported to England, constitute an infringement of your rights, and the efforts made in defense of those rights cause certain prejudice, of which foreign competitors do not hesitate to avail. The extended sale and practical use of Dunlop motor tires are, however, proving the strongest factors in establishing the superiority of tires made at home under the original patents to which they owe their existence."

REPORT OF THE SILVERTOWN COMPANY.

At the fortieth annual meeting of shareholders of the India-Rubber, Gutta-Percha, and Telegraph Works Co., Limited (London, December 15), the accounts presented showed a net profit for the fiscal year ended September 30 of £54,568 16s. 3d. [= \$265,559.23], against a profit of £57,554 3s. 4d. and £56,057 1s. 5d. for the two preceding years, respectively. The general business showed a falling off as compared with last year, due to a general depression in trade, as a result of which competition has been, if anything, keener than usual. The usual dividend of 10 per cent. was paid for the year. The amount carried forward is £66,930 7s. 10d., against £62,361 11s. 7d. carried forward from the preceding year.

PALMER TIRE PROFITS.

THE last yearly report of The Palmer Tyre, Limited—in which company the Silvertown company hold an important interest—showed profits of £7558, as against £6971 for the year ended September 30, 1902. The dividend this year is 10 per cent. The company are quite hopeful with regard to their new motor tire, described elsewhere in this Journal.

GERMANY.

THE Continental Caoutchouc- und Guttapercha-Compagnie (Hannover) have completed a new building, intended principally for the extension of their export facilities, which fills the last remaining space available on their premises on the Vahrenwalderstrasse.

—The Continental company announce that Manfield & Berger have been appointed their representatives at Dresden (at Palmstrasse, 1), to succeed G. & A. Thoenes, their representatives for many years.

—In a circular to the trade Messrs. Thoenes give expression to their regret at terminating the relations with the Continental company, so pleasantly maintained for 25 years, but they have decided upon this step on account of the advancing years of the heads of the firm, and the growth of their own manufacturing business. G. & A. Thoenes became established as manufacturers of packings—rubber, asbestos, and other—at Radebeul-Dresden, in 1878, and on December 5 celebrated the twenty-fifth anniversary of the founding of their business.

—The *Gummi-Zeitung* hears that negotiations for the formation of a combination of elastic webbing factories of Germany and Austria are nearing completion.

THE GERMAN RUBBER INDUSTRY HONORED.

HERR SENATOR CARL MARET, Harburg, director of the Vereinigte Gummiwaren-Fabriken, Harburg-Wien, has been appointed by his Majesty, the Emperor of Germany, an Imperial Prussian Counsellor of Commerce. This distinction honors alike the whole branch of our industry, because Herr Senator Maret is the nestor of the German rubber industry, and presiding officer of the Central Society of German Rubber Goods Factories. Great satisfaction and congratulations pervade the large circle in which Herr Counsellor of Commerce Maret is held in the highest esteem on the news of this conferred distinction.—*Gummi-Zeitung*.

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED NOVEMBER 3, 1903.

NO. 742,831. Pneumatic tire [having a deflated emergency tire between the rim and the ordinary tire and connected with the valve stem]. J. R. Brunt and R. C. Pitt, Christchurch, New Zealand.

742,855. Hose support [a rod connected with a gas jet, to prevent tubing from resting on the glass globe]. J. C. Garrett, San Francisco.

742,880. Pneumatic device for cleaning carpets, floors, or the like. A. Lotz, assignor to Sanitary Compressed Air and Suction Dust Removing Co., both of San Francisco.

743,018. Inhaler [for the administration of remedies]. J. N. McKim, Montreal, Canada.

743,043. Vehicle tire [comprising an elastic outer casing, and a wooden core formed in two members with trusses between]. G. W. Southwick, Franklin, Massachusetts.

743,105. Golf ball. J. H. Roger, Glasgow, Scotland.

743,174. Waterproof garment. James Kipp (manager Goodyear Rubber Co.), New York city.

743,292. Anesthetic apparatus [for administering anesthetics; comprising a face piece, a rubber bag for regulating the air supply, and other features]. V. Knowles, Reading, England.

743,309. Resilient core and tire. C. Miller, Binghamton, New York.

743,401. Means for attaching hose to coupling. H. B. Sherman, Battle Creek, Michigan.

743,409. Apparatus for administering anesthetics. G. H. Hurd, Cleveland, Ohio, assignor to F. M. Richardson and J. F. Field, Chicago.

Trade Mark.

41,422. Pneumatic tires. Continental Caoutchouc- und Guttapercha-Compagnie, Hanover, Germany. *Essential feature.*—Two similar devices on a horizontal line, each representing a prancing horse surrounded by two circles, having arranged between them the letters "C. C. & G. P. Co." and "H." Used since February 8, 1895.

ISSUED NOVEMBER 10, 1903.

743,430. Fountain marking pen. J. Berg, New York city.

743,486. Surgical pad. G. H. Gilmore, Murray, Nebraska.

743,570. Toy. E. S. Savage, Brooklyn, New York.

743,662. Syringe. C. S. Ruckstuhl, St. Louis, Missouri.

743,721. Marine life pail [adapted to serve as an ordinary pail, as well as a life preserver, said pail being provided with an air chamber and a handle to serve as a hand grasp at the bottom thereof]. H. E. Herrendeen, Muskegon, Michigan.

743,741. Insufflator. Anna Mueller, Knoxville, Pennsylvania.

743,796. Coupling for air brake hose [comprising a car coupler, a hanger attached to the car coupler, and a support for the air brake hose adjustably attached to the hanger]. A. F. Allan and J. A. Lenhoff, Wilmington, Delaware.

743,963. Tire repair tube. T. Weighle, assignor to Diamond Rubber Co., both of Akron, Ohio.

ISSUED NOVEMBER 17, 1903.

744,073. Hose coupling. M. E. Henderson, Fort Valley, Georgia.

744,099. Vehicle tire [comprising a solid core, a rubber cushion thereabout, and an outer facing, with a series of bands of fabric for attaching the tire to the wheel felly]. C. A. Pettie, Brooklyn, N. Y.

744,100. Vehicle tire. *Same.*

744,146. Top [composed of two concentric pieces with an intermediate buffer of rubber]. G. Wilken, Englewood, New Jersey.

744,210. Tire for vehicle wheels [a rubber cushion tire having a metallic tread portion in sections]. G. Lagache, Akron, Ohio.

744,327. Vulcanizer. H. C. Frost and G. M. Stadelman, Akron, Ohio.

744,394. Process of making single tube pneumatic tires [by imposing a strip of canvas frictioned on both sides and of sufficient size to form the outside layer of the inner tube of the tire, upon a strip of sheet rubber of like size, so as to project over said rubber strip at one end and one side thereof; uniting said strip of canvas and rubber; securing the valve stem therein; and folding the outer edges of said composite strip over together and joining them so as to form the strip into an annular tube; then inflating the tube and rolling the outer layers of the tire thereof]. T. R. Palmer, Jeanette, Pennsylvania.

744,435. Pneumatic tire [with metallic tread portion, being of the class of tire as that by the same inventor described in THE INDIA RUBBER WORLD, September 1, 1903—(page 428)]. I. Tennant, assignor to Tennant Auto-Tire Co., both of Springfield, Ohio.

744,436. Pneumatic tire. *Same.*

744,437. Carpet renovator. J. S. Thurman, St. Louis.

744,455. Moistening device [for moistening gummed surfaces, as postage stamps]. J. T. Alwart, Chicago.

744,483. Automatic pump [for inflating wheel tires, operated by being connected with the wheel]. W. F. Carlberg, Sisseton, South Dakota.

744,493. Vehicle tire. R. M. Connable, Baltimore, Maryland.

744,574. Protecting mantle for cycle or air tubes [consisting of animal hide]. C. A. Leske, Heildburg, Germany.

744,589. Hose coupling. F. A. Moore, Garee, Pennsylvania.

744,590. Life saving device. J. Moore, Boston, Massachusetts.

744,634. Hose coupling. F. A. Silver, Millvale Station, Pennsylvania.

744,642. Fountain pen. H. W. Stone, New York city, assignor to A. A. Waterman, Winchester, Massachusetts, and W. G. Frazer and H. W. Geyer, New York city.

744,663. Tire construction. C. E. W. Woodward, assignor of one-half to Fisk Rubber Co., Chicopee Falls, Massachusetts.

Re-Issues.

12,170. Storm apron. J. C. Crimins, Indianapolis, Indiana. Original No. 715,027, dated December 2, 1902.

Trade Mark.

41,472. Rubber boots and shoes. Hood Rubber Co., Boston. *Essential feature.*—The word "Pilgrim." Used since March 1, 1901.

ISSUED NOVEMBER 24, 1903.

744,718. Massage appliance. Isabel Cassidy, New York city.

744,743. Insulated handle connection. J. H. Gault, assignor to Hero Fruit Jar Co., both of Philadelphia.

744,745. Collapsible bath tub. W. G. Gittings, Racine, Wisconsin.

744,788. Hose pipe coupling. W. Noble and B. L. Wigton, West Union, West Virginia.

744,798. Overshoe. A. E. Roberts, assignor of one half to N. P. Bowler, both of Cleveland, Ohio.

744,846. Self closing mouth for bags. G. W. Williams, New York city.

745,007. Body protector [composed in part of pneumatic shoulder protecting pads or shields for ball players]. J. Gamble, assignor to G. A. Reach, both of Philadelphia.

745,040. Pneumatic tire [provided with independent air receiving chambers, a valve common to both of said chambers, a partition between the chambers being provided with a channel leading from the valve to the said chambers, and auxiliary valves located within the chambers at the outlet of the said channels, the pressure of air in the chambers serving to keep the auxiliary valves closed]. T. J. Cooper, Paterson, New Jersey.

745,084. Eraser [for use on typewriting machines]. H. B. Tooker, New York city.

745,212. Manufacture of the cores of golf or like balls [from a tubular length of India-rubber or other elastic material]. P. A. Martin, Birmingham, England.

745,213. Manufacture of golf balls. *Same.*

745,300. Machine for making pneumatic tires. U. P. Smith, Chicago.

Trade Mark.

41,523. Insulating preparation for electrical machinery and apparatus. Massachusetts Chemical Co., Boston. *Essential feature.*—The word "Armalac." Used since 1903.

41,529. Asphaltic cements. The Barber Asphalt Paving Co., Philadelphia. *Essential feature.*—The word "Genasco."

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

THE BRITISH PATENT RECORD.

[* Denotes Applications from the United States.]

PATENTS APPLIED FOR—1903.

22,637. S. Butler, London. Pneumatic tire and wheel rim for same. Oct. 20.

22,682. G. Leitner, W. Bessin, and C. Passoth, London. Apparatus for charging pneumatic tires with compressed gas. Oct. 20.

22,721. R. S. Wood, Manchester. Pneumatic tire for cycles and vehicles. Oct. 21.

22,731. I. Fraser, Manchester. Revolving heel pad. Oct. 21.

22,826. Eduard Frankenberg, Manchester. Machine for vulcanizing rubber waterproof fabrics. Oct. 22.

- 22,888. W. Scheck, London. Resilient tire. Oct. 22.
 22,934. F. Hoar, Portsmouth. Non-puncturable tire. Oct. 23.
 22,960. S. Butler, London. Elastic tire. Oct. 23.
 22,972. R. K. Evans, London. Pneumatic tire. Oct. 23.
 22,985. F. C. Weisse, London. Means for automatically inflating tires. Oct. 23.
 22,986. L. L. A. Seguin and J. F. G. de Sales, London. Method of manufacturing an artificial Caoutchouc. Oct. 23.
 23,002. C. de Buren, London. Golf ball. Oct. 23.
 23,020. G. Hookham, London. Golf ball. Oct. 24.
 23,035. J. H. Salmon, Manchester. Means for attaching rubber soles to boots. Oct. 24.
 23,046. T. E. Silvester, Birmingham. Rubber sole and heel pieces for boots. Oct. 24.
 23,051. T. Hunter, London. Tire inflator. Oct. 24.
 23,052. G. Desclee, London. Non-slipping tire cover. Oct. 24.
 23,099. C. Rawson, Manchester. Continuous vacuum drying apparatus. Oct. 26.
 23,101. H. Cassel, Glasgow. Puncture proof band for pneumatic motor tires. Oct. 26.
 23,105. Isidor Frankenburg, Limited; R. J. Frankenburg, and S. J. Rowe, Manchester. Waterproofing cloth. Oct. 26.
 23,149. G. Gordejeff, London. Spraying device for liquids. Oct. 26.
 23,336. J. B. Belavon, Belfast. Pneumatic tire. Oct. 28.
 23,404. S. Butler, London. Non slipping elastic tire. Oct. 28.
 23,427. C. Challiner, Manchester. Tire for heavy vehicles. Oct. 29.
 23,431. E. Chatterton, F. Tannar, and J. Rendall, London. "Ante-Suckshun" revolving rubber heel pad. Oct. 29.
 23,435. T. T. Spencer, London. Metal plate for revolving top pieces of heels for boots. Oct. 29.
 23,513. T. Towler, Manchester. Inflatable toy. Oct. 30.
 23,531. J. Mitchell, Wallingford, Berkshire. Air pump for automatically keeping pneumatic tires filled while in motion. Oct. 30.
 23,542. H. Price, Birmingham. Golf ball. Oct. 30.
 23,555. J. Lane, London. Tire for motor cars. Oct. 30.
 23,576. J. F. Barrett, London. Filter for hose feed pipes of locomotives. Oct. 30.
 23,582. E. Duerr, London. Elastic tire for vehicles. Oct. 30.
 23,762. H. Byng and C. J. Jacob, London. Golf ball. Nov. 2.
 23,793. R. Bridge, Manchester. Apparatus for the manufacture of rubber tubes. Nov. 3.
 23,859. R. Thornton, London. Tire for road vehicles. Nov. 3.
 23,879. J. Jackson, Beaconsfield, Bucks. "An advertising tyre" for use on cycles and vehicles. Nov. 4.
 23,911. E. Alexandre, London. Means for preventing tire punctures. Nov. 4.
 23,991. J. T. Pearson, Burnley. Tire for motor cycles. Nov. 5.
 23,994. P. W. Fawcett and E. L. W. Bellhouse, Sheffield. Pneumatic tire. Nov. 5.
 24,012. W. Evans, Liverpool. Improvement in mackintoshes and rain coats. Nov. 5.
 24,022. J. W. Brown, London. Tire for motor cars. Nov. 5.
 24,032. E. Butler, London. Elastic tire and rim for the same. Nov. 5.
 * 23,035. C. A. Allison, London. Tire for bicycles and vehicles. (The Fawkes Rubber Co., Denver, Colorado.) Nov. 5.
 * 24,036. C. A. Allison, London. Mold for tires. (The Fawkes Rubber Co., Denver, Colorado.) Nov. 5.
 * 24,062. V. F. Feeny, London. Seamless toy balloon. (The Rubber Balloon Co., Brooklyn, New York.) Nov. 5.
 * 24,155. W. I. Ferris, London. Fountain pen. Nov. 6.
 * 24,156. W. I. Ferris, London. Fountain pen. Nov. 6.
 24,175. L. H. Swain, Keighley. Tire for road vehicles. Nov. 7.
 24,187. C. Lee and W. Steane, Birmingham. Resilient tire. Nov. 7.
 24,209. G. V. De Luca, London. Golf ball. Nov. 7.
 24,245. W. Reid, Taunton. "Reid's" reversible heel tip. Nov. 9.
 24,253. A. Cook, Quinton, near Birmingham. Puncture sealing device for pneumatic tires. Nov. 9.
 24,257. R. C. MacDonald, Linlithgow, Scotland. Pneumatic tire. Nov. 9.
 24,269. G. Pan, London. Fountain pen. Nov. 9.
 24,320. J. Garratt, Netherton, Dudley. Sectional rubber cushion for boots. Nov. 10.
 24,322. E. B. Killen, Bangor, Ireland. Pneumatic tire. Nov. 10.
 24,397. W. A. Martin, London. Heel piece for boots. Nov. 10.
 24,450. J. W. White, Liverpool. Tire for vehicle wheels. Nov. 11.
 24,538. B. Maddock, London. Attachment of heel pads to boots. Nov. 12.
 24,556. J. Heys, Liverpool. Attachment of "wired on" elastic tires for wheels. Nov. 12.
 24,686. J. G. Grose, Coventry. Elastic tire cover and manufacture of the same. Nov. 13.
- PATENTS GRANTED.
- [ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 4, 1903.]
- 15,251 (1902). Pneumatic tire [for motor cars; the cover is so molded that when in position it is laterally compressed between the detachable flange rings of the wheel rim]. G. E. Heyl-Dia, Manchester.
 15,287 (1902). Pneumatic tire [involving a rubber repair strip]. E. B. Raper, York.
 15,295 (1902). Pneumatic tire [for cycles and vehicles; rendered puncture proof by a layer of cork]. R. J. Boyce, Norwich.
 15,314 (1902). Pneumatic tire [for heavy vehicles; with metal shield in segments embodied in the tread]. E. J. Buckingham, London.
- [ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 11, 1903.]
- 15,596 (1902). Hoof pad. J. Campbell, Chard, Somersetshire.
 15,597 (1902). Hoof pad. *Same*.
 15,598 (1902). Hoof pad. *Same*.
 * 15,669 (1902). Atomizer or spray producer. H. H. Lake, London. (R. Lockwood, Boston, Massachusetts.)
 15,856 (1902). Golf ball [with hollow interior in which a small metal or other ball is free to move]. H. M. Singer, Dereham, Norfolk; D. Auchterlonie and W. Auchterlonie, Saint Andrews, Scotland.
- [ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 18, 1903.]
- * 16,283 (1902). Pneumatic tire [relates mainly to the means of attachment of the tire to the wheel rim]. Charles H. Wheeler and R. W. Kremer, Akron, Ohio.
 * 16,290 (1902). Solid rubber tire. *Same*.
 16,411 (1902). Elastic tire [consisting of spring segments secured to channel shaped rims, with or without the application of rubber]. H. Carmont, Kingston-on-Thames.
- [ABSTRACTED IN THE OFFICIAL JOURNAL, NOVEMBER 25, 1903.]
- 16,505 (1902). Hose winding machine. H. Neal, Great Grimsby, Lincolnshire.
 * 16,587 (1902). Life saving belt [for marine use or swimming; inflatable by means of a mouthpiece]. W. P. Tibbits, Toledo, Ohio.
 16,660 (1902). Pneumatic tire [relates to means for repairing the outer cover]. E. B. Raper, York.
- THE GERMAN PATENT RECORD.
- PATENTS GRANTED.
- 147,797 (Class 392). Process for making seamless rubber bags for air balloons and the like. Rubber Balloon Co. of America, Brooklyn. Nov. 4.
- DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].
- 209,825 (Class 30g). Elastic band with appliances on the ends for fastening and a slip hole in the middle for clasping the neck of a nursing bottle. B. Amolin, Teterow. Oct. 28.
 209,887 (Cl. 63e). Elastic rubber tires covered with sectional protecting tread in which the protecting leaves are interchangeable. H. Bremen, Neheimer Metallwaaren- u. Werkzeug-Fabrik. Neheim a/ Ruhr. Oct. 28.
 209,888 (Cl. 63e). Elastic rubber tire with single metal plates overlaid with an articulated chain. *Same*. Oct. 28.
 210,103 (Cl. 63). Solid rubber tire, of which the holes for the retaining wires are armed with spiral wires embedded in and vulcanized with the rubber. Vereinigte Berlin-Frankfurter Gummiwaaren-Fabriken, Gelnhausen. Oct. 28.
 210,320 (Cl. 30g). Rubber nipple, with appliance for fastening upon neck of nursing bottle. Elizabeth Fasseke, Dresden. Nov. 4.
 211,043 (Cl. 63d). Felloe for vehicle wheels with a covering of rubber and a rim adapted to be removed. C. Menke, Mannheim. Nov. 19.
 211,336 (Cl. 63d). Elastic tire segments with imbedded anchoring screws, said segments being of smaller radius on the under side than the outer edge of the felloe. W. Balassa, Vienna. Nov. 19.
- PATENTS APPLIED FOR.
- 19,549 (Class 30d). Elastic stocking with hose-like calf and a long seam on the under side. W. Freeman and W. R. Cartledge, Philadelphia, United States. Oct. 28.

VIEWS OF RUBBER MANUFACTURERS.

I—A GOOD YEAR PAST ; A BETTER COMING.

"THE year 1903 is of course the banner year in the rubber trade. From January to July the business in mechanical rubber goods was something unprecedented, and while it has fallen off some during the fall months, it still has been good. The tire business was not remarkable during the first part of the year, but it has been exceedingly good during the fall, the business for October being in excess of anything we have ever known. On the whole, I think that the year's business in rubber goods was from 10 to fifteen per cent. more than last year, and that was the best up to that time."

"How about next year?"

"I expect next year's business to be even greater. The country is prosperous, the crops good, the strikes and the depression in the iron industry about over, and the financial panic is straightening out. I see no reason for any alarm on the part of the rubber manufacturer. There is plenty of rubber to be had and the prospects are bright."

"I look for next year's business to be profitable. Orders for goods are rather over the average, and I see no reason why the manufacturers should not make money. Consumers are ready to pay fair prices for what they want. A few years ago there was a great demand for cheap bicycle tires, but the users were not satisfied, and soon learned that good honest-rubber tires were the cheapest that could be made. People are learning the same thing about automobile tires; low priced tires that were in demand a year ago won't sell at all now. The average price paid for automobile tires in 1904 will be higher than 1903, and there will be more of them sold."

"Some manufacturers seem to be alarmed about the supply of rubber. Now I don't believe that there is any likelihood of the supply giving out, or that rubber will be made abnormally high this year. Speculators may put prices up again, as they did last September, but they will not stay up, because the demand does not warrant it. I figure that the consumption of rubber for a good while to come will remain as large as it is to-day, because new uses for it are coming up all the time, but I don't look for any such great increase in the demand for rubber goods as will warrant continuous high prices for the material. Improvements continue to be made in compounding, making necessary less rubber to produce goods of the same quality, and other materials come in to displace rubber goods, all of which relieves the pressure of the demand for rubber."

II.—BUSY ALL LAST YEAR AND STILL BUSY.

"We don't know how other factories may have fared, but we have had all the business we could do. The year has been the best we have ever known—all that we could possibly desire, even with the high price of raw material. As for next year, we have no reason to anticipate a falling off in trade. We have enough business in hand to keep us busy the first part of the year and our salesmen are making no discouraging reports. General business is in a good condition and that means good business for the rubber men."

"We found during the early part of the year that the demand for mechanical goods was going to be very large, and we provided for it in our purchases of materials. We found later that we had not misjudged the increased demand, and when rubber was so high somewhat better prices prevailed for finished goods, so our profits were all that we could expect. We do not believe that rubber next year will average as high as it has this, and there will probably be some reduction in prices of goods, but we figure that our factory will run full time all year, and that

means good business for us. I cannot see why there should be any pessimists in the rubber industry."

III—TRADE LARGE, BUT PROFITS TOO SMALL.

"THIS year's business has been about the same in volume as the business of the year before. I think with some factories it would show up less and with some it would be more. But the profits have not been correspondingly large, so that the year really has not been as good as some other years. The truth of the matter is that the rubber manufacturing business has been badly cut up by competition. This has had an effect on prices, and on profits. During the present year the cost of manufacture has increased and the return for the manufactured product has not increased; in fact, it has slightly decreased. The price of rubber has averaged from 20 to 35 per cent. higher than during 1903; the price of cotton duck has advanced, the price of coal has been more for us than it was last year, for the reason that it was not as cheap last spring as it was in the spring of 1902. Hence our goods have cost more to make than last year."

"On the other hand, many more people have gone into making mechanical rubber goods of late years, and these people, in order to get business, have not only cut prices to a considerable extent, but have bid for business in all directions. There is no such thing as an old concern holding on to its business in any special lines, although every one of us have customers who will give us the preference. In all ordinary lines the new competition is sharp and returns have been less, although the volume of business has not decreased."

"What do you think the next year will show?"

"That, of course, is guess work. These are the dull months in mechanical goods, but our orders for spring deliveries have been fair and current business is coming in as well as we have any reason to expect at this season of the year. But I do not anticipate that next year is going to be any better than this. As a matter of fact, all business has been rather reacting from its high water mark during the last nine months. We are getting down to a more conservative basis, and while the rubber goods business has never had any particular 'boom' the drawing in in other lines will necessarily affect it. The financial panic, the cutting of dividends on many securities, the strikes, the increase of business troubles, all will have an effect to keep the demand for rubber goods from running far ahead."

"Still, the necessity for mechanical rubber goods becomes more and more imperative. There was a time when rubber belting, rubber hose, rubber clothing, rubber floor coverings, and other rubber staples were very much less necessities than they are now. I believe that every year adds to the standing of this kind of goods and consequently increases the demand regardless of trade conditions. So I do not look for any falling off next year; nor do I look for any 'boom.' Conservative business men will make money, but they will make less on the same volume of business than heretofore."

BY A CHICAGO CORRESPONDENT.

WHILE the demand for mechanical rubber goods in the territory supplied from Chicago has been exceptionally heavy during the past year, the trade has not been altogether satisfactory to the distributing agents in this city. That is to say, the rate of profits has hardly been commensurate with the volume of business. The demand was exceedingly good at the beginning of 1903, and continued to increase for several months at a rate which promised to make this a record breaking year. It is generally agreed, however, that lately a decline has been experienced in this respect. As to the future, there is a diversity of opinion. The managers of some houses hold to the idea

that the present lull is only temporary and that business will pick up rapidly after New Year's. Others suggest that during the year in which a presidential election is pending, general business conditions are not likely to be so good, and that this will affect the rubber trade.

Speaking of profits, one manufacturer's agent, in analyzing the local situation, said conditions were peculiar in the Chicago field. Competition in the rubber trade in Chicago is keener than in any other part of the United States. It is far more so than in New York, for here western as well as eastern manufacturers enter into competition with the local companies. Even a California manufacturer has a selling agency here. This gentleman said that there were four times as many rubber manufacturers' agents in Chicago as in New York. Practically three blocks in Lake street are given over to rubber goods branch houses and manufacturers' agents for mechanical goods, and all of these houses are bent upon making the best possible showing in the volume of business, even if sometimes too little regard is given to profits.

Another thing, according to one member of the trade, is the fact that there is still a tendency on the part of western consumers of rubber goods to consider price before quality. This is especially true, this dealer said, among the new big industrial corporations, whose purchasing agents have not all come to realize that the better grades of rubber goods are often cheaper in the end. In order to make a good showing on the year's balance sheet, they keep down expenses at the time of purchase and let the future take care of itself.

Among those expressing a favorable opinion of the present and future of the local rubber trade is Mr. George Hawkinson, manager of the rubber department of George B. Carpenter & Co., general western agents for the Peerless Rubber Manufacturing Co. (New York). This gentleman, by the way, feels that the western consumer of mechanical rubber goods as a rule appreciates much better than in the past the advantage of buying the better grades.

"We have been working along this line for some time," said he. "Consumers are beginning to buy goods now which a year or two ago they would not even look at, considering them too high priced. Requests for bids and all specifications sent to us call for a high grade of goods. Our trade was far above the ordinary year, though it eased off during the last few months, but we always have a lull at the end of the year. Our long suit is steam packing, belting, and hose, and the indications are that there will be a much more active belting market in the coming year, with a tendency toward higher and firmer prices. I expect to see the whole mechanical rubber goods market pick up at the first of the year and go right along."

GOOD WORDS FOR THE BICYCLE.

IF there be any who think that the days of bicycling are over, they might form a new opinion after reading a collection of views on the subject just made public by Colonel Albert A. Pope, the veteran manufacturer. For many years it has been the habit of Colonel Pope to plentifully supply editorial desks with a convenient calendar, with one leaf for each day, having on each leaf an expression on the merits of bicycling. His 1904 calendar, with 366 leaves, contains extracts from that number of letters, all written within six months past, and each containing a hearty word of praise for the bicycle as pleasant, wholesome, and valuable. And the writers form a list of men and women representative of all classes of intelligent people, including business men of wide eminence, members of all the learned professions, college presidents, editors, and judges.

The first letter is from the president of Harvard University, who, with Mrs. Eliot, finds bicycling agreeable and wholesome. The next are from the French ambassador at Washington, a noted Boston lawyer, a Methodist bishop, a professor of surgery, an army general, a naval commander, a United States judge, and so on—all commending the bicycle, and expressing pleasure in its use. Editor Dana, of the New York *Sun*, writes: "In country homes the bicycle is now a necessity; and whatever will help make a good wheel for little money is to be encouraged."

These letters are interesting at least in showing that some of the earlier devotees of the wheel have not lost their enthusiasm, and Colonel Pope may be counted upon—now that he is active in business again—to see to it that enough of the rising generation become bicyclists to fill the vacancies which death must soon cause in the "old guard." Whether bicycling can again be made as popular as it was ten years ago, however, is another matter, although Colonel Pope is very hopeful on this point. The rubber tire trade, it may be noted, do not share the Colonel's enthusiasm, though convinced that a certain demand will always exist for bicycle tires, and under conditions perhaps more favorable, from the standpoint of tire profits, than in some former years.

* * *

IN an interview with one of the longest established and most widely known bicycle agents in the trade, near the end of December, THE INDIA RUBBER WORLD was informed that salesmen had gone out earlier than usual, and that the orders obtained to date had been larger than even during the palmy days of the bicycle. The promise for the year he regarded as most promising. There had been an advance on all grades of wheels, and no business was being done except at a profit. He said that the American Bicycle Co. had sold a great many more wheels during its career than was generally supposed, since many people took it for granted, because the company was in financial straits, that it was doing no business. There had been a demand for bicycles all the time, but not all the business had been profitable. He felt that the demand could be and would be increased, and with the business on a new basis, a more profitable era for the bicycle manufacturers had set in.

AMERICAN RUBBER GOODS EXPORTS.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of October, 1903, and for the first ten months of the calendar year, for five years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
October, 1903.....	\$ 77,081	\$162,311	\$ 235,107	\$ 474,499
January-September.	633,744	628,592	1,855,756	3,118,092
Total, 1903.....	\$710,825	\$790,903	\$1,855,756	\$3,592,591
Total, 1902.....	596,272	865,711	1,659,205	3,121,188
Total, 1901.....	502,264	733,329	1,470,176	2,705,769
Total, 1900.....	443,939	526,878	1,260,961	2,231,778
Total, 1899. ...	(a) 206,105	238,815	1,253,388	1,253,388

(a) Included in "All Other" prior to July 1, 1899.

The number of pairs of rubber footwear exported during the first ten months of three years past has been; 1,799,009 in 1901; 1,922,744 in 1902; and 1,704,522 in 1903.

Later returns, bringing the official record down to November 1, 1903, bring the total value of exports for eleven months to \$3,944,375. The rate of footwear exports does not show any improvement.

DEATH OF MRS. E. S. CONVERSE.

THE news will be read with very wide regret of the bereavement of one of the most notable men in the trade—the Hon. Elisha S. Converse, founder of the Boston Rubber Shoe Co.—in the death of his wife, at their home in Malden, on December 16, in the sixty-first year of their married life.

Elisha Converse was not yet twenty when, in partnership with a Mr. Whipple, in the town of Thompson, Connecticut, he became actively interested in business pursuits on his own account. This business so prospered that the firm soon established a branch store in the adjacent town of Webster, Massachusetts. On the most direct road between the two stores, as Mr. Converse traveled daily to and fro, he passed, and often visited, the home of Captain Hosea Edmonds, a descendant of settlers at Lynn as early as 1630, and a man of position in the community where he then resided. His activity in the state militia had rewarded him with a title by which he became widely known, and he was likewise active in the Baptist society at Webster.

There was a wedding at the home of this same Captain Edmonds on September 4, 1843, for the young merchant had won the heart of the militia captain's fair daughter—his oldest child—Mary Diana, then in her nineteenth year. The ceremony was pronounced by the Rev. L. G. Leonard, pastor of the Baptist church. Mr. Converse and his bride forthwith began housekeeping in Thompson Center. About a year later he closed out his business interests there and went to Boston, in which city and its vicinity he has since led an active business career. In 1847 Mr. and Mrs. Converse were led by business considerations to make their home at Stoneham, Massachusetts; in the same year both united with the Baptist church at Malden, and in 1850 they began to make their home in the latter city.

It is not necessary here to recall the many ways in which the Converse family have contributed to the social life of Malden and to the general welfare of the community. As a leading business man, and as mayor and assemblyman, Mr. Converse was more or less a public character, but during more than a half century, though personally inclined to the quiet of home life, Mrs. Converse ever bore her share of social duties with becoming dignity and grace. After a time, in addition to their attractive home at Malden, the Converses acquired a home in Boston, where they usually spent a portion of each year, their son and two daughters being given an opportunity to enjoy to the utmost their taste for society. In 1893 Mr. and Mrs. Converse celebrated their golden wedding at Malden, on which occasion over 1000 invitations were issued, and the attendance was very large. The celebration was attended by Mr. Converse's sister, Mrs. Emeline Williams, who had been bridesmaid at the wedding fifty years before, and by Dr. Stephen S. Griggs (then of Brooklyn, New York), who had been best man.

The eldest of the children of Mr. and Mrs. Converse—Frank Eugene—died in early life, and it was as a memorial to him that the parents founded the first of their extensive benefactions to Malden—the Memorial Public Library. The three re-

maining children survive: Colonel Harry Elisha Converse, Mrs. Costello C. Converse, and Mrs. Lester Leland.

The funeral, at the Converse residence, on December 18, was attended by hundreds of residents of Malden and by many others from a distance. The mayor and the entire city government were present, and delegations from numerous social and charitable organizations of which Mrs. Converse was a member. Among the handsome floral tributes were set pieces from nearly thirty organizations. The banks and stores were closed, and business suspended throughout the city. The Rev. C. H. Moss, pastor of the First Baptist church, officiated, assisted by the Rev. Dr. W. H. P. Faunce, president of Brown University, and the Rev. H. O. Hiscox, of Albany, New York. The interment was in the family lot in Woodlawn cemetery.

RIO MICHO RUBBER PLANTATION CO.

THE interest controlling this plantation is practically identical with that concerned in the Chiapas Rubber Plantation



MRS. MARY DIANA CONVERSE.
[Honorary President Ladies' Aid Association.]

and Investment Co., a newer but larger enterprise, owning an adjacent plantation and sharing the same administrative offices. A recent report by President C. A. Westenberg says: "It has been a year of marked progress. Honest work has been done in cleaning out the rubber about the [rubber] trees. The place has never been in such fine condition. We have over 1000 acres now under cultivation, over 800 acres fully planted to rubber, and when I left [in November] they were transplanting on other lands from our good nurseries. Ten thousand of our trees are now four years old, and in two years can be tapped with perfect safety."—The Rio Michol Rubber Co. was organized about five years ago, being one of the pioneers in the business in Mexico. It was reorganized under the above name, and incorporated under the laws of Arizona in July, 1903, the capital being increased from \$100,000 to \$600,000. Mr. Westenberg is president; L. S. Sherman, vice president; E. A. Girvin, secretary;

and W. F. B. Wakefield, treasurer. President Westenberg writes to THE INDIA RUBBER WORLD: "We have nearly 1000 acres [of rubber] under cultivation, and I do not believe that there is a finer plantation in Mexico. . . . It has been the policy of the company, from its inception, to move on conservative lines. We have done no advertising. The directors have shown the proposition to their friends, and in this way we have secured sufficient money to keep us going. I presume that no corporation was ever operated more economically. Our officers are men who receive salaries from other business, and are all giving their services to the Michol gratuitously. The officers and directors are all large stockholders and therefore feel that they can afford to give their time to the management of the affairs of the company without compensation." Santiago Robinson is the plantation manager.

ALL reports are agreed as to the prominence given to motor cycles at the late cycle shows in England and to the demand for tires for such vehicles.

CANADIAN IMPORTS OF RUBBER GOODS.

THE value of imports of manufactures of India-rubber and Gutta-percha into Canada during the fiscal year ended June 30, 1903, as officially stated, shows an increase both in the imports from the United States and in the total, as has been the case regularly for several years past:

Imports	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Boots and shoes...	\$141,713	\$553	\$15	\$142,288	\$35,254.76
Belting	60,352	16	...	60,398	15,112.67
Clothing and water-proof cloth ..	54,276	411,092	86	465,454	102,891.11
Hose	42,732	859	2	43,593	15,059.01
Packing and mats ..	46,011	567	102	46,680	16,230.10
All other	228,302	33,722	25,374	287,398	69,325.50
Total	\$573,421	\$446,811	\$25,579	\$1,045,811	\$253,873.15

Total, 1901-02...	\$525,218	\$217,812	\$31,999	\$775,029	\$201,698.64
Total, 1900-01...	434,590	154,944	21,738	611,272	163,012.44
Total, 1899-00...	401,867	118,111	19,083	539,061	149,006.80
Total, 1898-99...	359,037	119,523	15,130	493,690	134,717.69

The imports for 1902-03 other than from the United States and Great Britain—mostly classed under the heading "All Other"—were from the following countries:

Germany.....	\$22,090	Austria-Hungary...	\$1,005	Russia.....	\$54
France.....	1,490	Belgium	425	China....	15

IMPORTS OF WATERPROOF CLOTHING AND WATERPROOFED CLOTH, FOR SIX YEARS.

FROM—	1897-98.	1898-99.	1899-00.	1900-01.	1901-02.	1902-03.
Great Britain..	\$110,464	\$91,643	\$88,426	\$117,754	\$179,937	\$411,092
United States..	35,230	59,894	64,138	52,219	54,020	54,276
Germany.....	570	252	213	7	158	45
France.....	208	53	14	20	72	—
Other countries	30	—	—	—	—	41

Total\$146,502 \$151,842 \$152,791 \$170,000 \$234,187 \$465,454

There may also be noted the imports of the following articles, not classified by the Canadian customs as "rubber goods," but having a relation to the industry:

IMPORTS,	United States.	Great Britain.	Other Countries.	Total Value.	Duties Collected.
Webbing, elastic and non elastic.....	\$110,896	\$48,148	\$5,349	\$164,393	\$29,810.51
Stockinettes for rubber footwear.....	46,233	11,420	...	57,653	8,091.50
Duck, for rubber belting and hose.....	272,137	1,797	...	273,934	free.
Rubber thread.....	4,458	...	...	4,458	free.

The imports of duck were just twice as large as for the preceding year, doubtless due to the movement on foot at one time to have a duty imposed on duck, and the desire of consumers to anticipate the operation of the proposed law.

Exports of Canadian rubber manufactures show a marked decline from the figures for 1901-02, when exports to the United States were stated at \$189,664—presumably for the most part to Alaska. The distribution of rubber exports for 1902-03 was—

To—	Value.	To—	Value.	To—	Value.
Great Britain..	\$44,741	Belgium.....	\$2,963	Turkey... ..	\$1,439
Australia	41,584	Chile.....	3,080	United States	6,556
New Zealand. 17,037		China.....	10		
Newfoundland 12,860		France.....	2,379	Total.....	\$142,891
British Africa. 323		Germany.....	881	Total, 1902..	322,572
Brit. E. Ind... 1,180		Italy.....	2,169	Total, 1901..	151,656
Brit. W. Ind... 793		Japan.....	12	Total, 1900..	170,488
British Guiana 1,332		Norway-Sw'n. 46		Total, 1899..	133,332
Hong Kong... 710		Spain.....	119	Total, 1898..	77,685
Aus.-Hung'y... 1,311		Switzerland.. 1,366		Total, 1897..	26,121

RAW MATERIALS.

THE customs returns embrace the following details in relation to crude India-rubber and allied materials. Of the items in the table, other than India-rubber and Gutta-percha, no matter how enumerated in the customs returns, it is evident that

the greater part is reclaimed rubber, produced in the United States:

CLASSIFICATION.	Pounds.	Value.
Gutta-percha.....	2,675	\$4,375
India-rubber.....	2,858,778	1,532,998
Rubber, recovered; rubber substitute and hard rubber in sheets.....	1,745,130	210,464
Rubber powdered and rubber waste.....	797,541	72,217
Total, 1902-03.	5,404,124	\$1,820,054
Total, 1901-02.....	4,792,088	1,653,704

IMPORTS OF RAW MATERIALS FOR EIGHTEEN YEARS.

YEARS.	India-rubber and Gutta-percha.	Recovered Rubber and Substitute.	TOTAL.
In 1885-86	739,169	19,499	758,668
In 1886-87.....	785,040	46,508	831,548
In 1887-88.....	1,225,893	88,471	1,314,364
In 1888-89	1,669,014	221,674	1,890,688
In 1889-90	1,290,766	147,377	1,438,143
In 1890-91.....	1,602,644	8,254	1,610,898
In 1891-92	2,100,358	106,080	2,206,438
In 1892-93.....	2,152,855	195,281	2,348,136
In 1893-94	2,077,703	529,900	2,607,603
In 1894-95.....	1,402,844	611,745	2,014,589
In 1895-96	2,155,570	643,169	2,798,745
In 1896-97.....	2,014,896	1,061,402	3,076,298
In 1897-98.....	2,457,321	1,316,494	3,773,815
In 1898-99.....	2,602,321	2,018,552	4,620,873
In 1899-1900	3,004,828	2,086,952	5,091,780
In 1900-01.....	3,016,862	1,907,975	4,924,837
In 1901-02.....	2,911,438	1,881,650	4,793,088
In 1902-03.....	2,851,453	2,542,671	5,404,124

There were exported during the fiscal year, principally to the United States, 1,806,023 pounds of old or waste rubber, valued at \$122,730 [averaging 6¼ cents per pound], of which 76,972 pounds are described as "not the produce of Canada."

SOME EARLY TRADE STATISTICS.

AN old volume of United States commercial statistics—before Canada had rubber factories—contains details in regard to the imports of rubber goods into British North America, in the year 1849, which may be tabulated as follows:

	Value.
Montreal.—India-rubber shoes (498 pairs)	£229 6 3
St. John.—India-rubber boots and shoes (28,330 pairs)....	Not stated
Brockville.—Manufactures of India-rubber.....	432 0 0
Kingston.—Manufactures of India-rubber.....	483 18 1
Hamilton.—Manufactures of India-rubber.....	277 17 6
Coburg.—Manufactures of India-rubber.....	22 0 2

All were credited to the United States, except £91 worth of Brockville imports from Great Britain.—Other details from the same volume, for the year 1845, follow:

Nova Scotia.—India-rubber shoes, 126 cases, value £565, of which £545 from the United States and the remainder from British North American ports.

Newfoundland.—India-rubber goods, value £212, of which £185 from the United States and the remainder from Great Britain.

Cape Breton.—Exports of 17 cases India-rubber goods, value £105, to other British North American ports.

St. John, New Brunswick, in 1848, imported 24,653 pairs of India-rubber boots and shoes. Newfoundland, in 1849, imported India-rubber goods: From the United States, £484; other North America, £222; Great Britain, £49; total, £755.

New York exports by sea to Canada in 1847 included 400 pairs of rubber boots and shoes, valued at \$300, and in 1848, 2199 pairs. Boston exported to Canada, in 1847 India-rubber shoes valued at \$1948; in 1848, \$352; in 1849-50, \$644. The goods referred to in this paragraph, however, were described as "foreign merchandise," which could have been only the crude Pará made rubber shoes.

A GOOD trade in hard rubber ornaments exists in Liberia, according to a report by the British consul there, to the Liverpool chamber of commerce, including bracelets, which the women buy from peddlers at 6 pence each. The *Gummi-Zeitung* mentions that these are made in Hamburg.

THE RUBBER TIRE OUTLOOK FOR 1904.

WHILE automobile manufacturers have been puzzling their brains to perfect some parts of their machines for the season of 1904, in order to have something that will be just a little better than anything the "other fellow" may have, the makers of automobile tires have also been busy, studying to bring out the best methods of tire construction, with the result that several new things will be seen the coming season, which will not only add to the durability and stability of the tire, but will add to the safety of the users of the new tires. For one thing, as a result of recent accidents on account of tires pulling off or slipping during bursts of speed, the majority of the 1904 tires will probably be equipped with better facilities for attaching them to the rims than the tires of last year. In addition to distinct improvements in tire construction, the rubber trade seems in a way to benefit largely from the recent agreement entered into with regard to the proper requirements of tires for automobiles of different types and weights, in order that the best possible results may be attained. Some of the tire makers, however, are waiting for the national automobile shows this month before announcing fully their new features for the 1904 trade.

While the question of new tires is being discussed, the comparative merits of the single tube and the clincher or detachable tire come in for no small amount of attention. From all appearances the latter type of tire is going to be the most popular, though it will probably never entirely supersede the single tube.

"The clincher tire is THE tire," said one manufacturer to an INDIA RUBBER WORLD representative. "We find that the demand for the clincher or detachable tire is greatly in excess of the demand for the single tube. The former has everything in its favor. So simple in construction and so easy to repair, the man who owns an automobile feels safer when he uses it than when using the single tube. He laughs at punctures. With a comparatively inexpensive outfit he is his own repairer, and soon mends a puncture which would be a puzzler to the man who uses a single tube. Should the inner tube wear out, replacing it with a new one is an easy thing, while the single tube, except in the case of a simple puncture, must go back to the factory. The outer casing may be punched full of holes, and yet give good service as long as the inner tube is in good shape, while with the single tube, one little hole may cause hours of trouble, and spoil many a pleasure trip.

"Many who remember how unpopular the clincher bicycle tire proved to be may wonder at this, but the automobile and the bicycle tire are two entirely different propositions. Cyclists soon found that with a little cement and a handy little rubber plug they did not need to fear punctures, and that they could repair any ordinary puncture by this method more quickly than they could take the detachable tire from the rim and remove the inner tube. Then, as a last resort, the single tube could be 'juiced,' prolonging its life several weeks and even months. With an automobile tire it is different. It is much more unwieldy, and the methods pursued by the cyclist to repair his tire would not avail the *chaffeur* stalled in a country road perhaps 50 miles from a town where he can secure the necessary materials to make permanent repairs. A bicycle weighing perhaps 26 pounds, and carrying from 150 to 185 pounds, is a very different thing from a heavy touring car. So it will be readily seen that the argument used in favor of the

single tube for bicycles does not apply to automobiles. Imagine 'juicing' an automobile tire and expecting it to perform its functions!"

The tendency is illustrated by the fact that tires of the clincher type are now to be offered for the first time from several important factories. Morgan & Wright will make a motor tire on the clincher principle, which is to involve specially treated fabric, designed to lessen any liability of separation of the plies of fabric. The tire is recommended as fitting the rim snugly, to prevent its becoming loose under severe strain. Besides, it has an especially tough casing and an extra heavy tread. A sectional cut of the Morgan & Wright tire is given herewith.

The Hartford Rubber Works Co. also will market this year, for the first time, a clincher automobile tire. This will be produced under license from The G & J Tire Co., as is the case with the new tire of Morgan & Wright.

Some new features are promised in the G & J tire itself, and new tires will be exhibited at the Automobile shows by the India Rubber Co. and the Indianapolis Rubber Co.

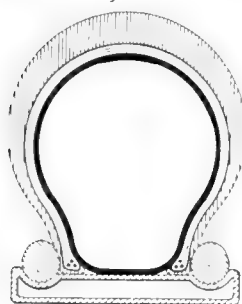
The B. F. Goodrich Co.'s "leader" for 1904 will be, as last year, of the clincher type. The tire, while apparently not changed, still is believed to work a distinct improvement, in respect to strength and durability, through the choice of material and details of workmanship, while it will be every bit as fast as their former products—a feature which is not entirely overlooked by automobilists when they purchase new tires.

An important feature of the new tire to be placed on the market by the Diamond Rubber Co. relates to the lug. The new tire, instead of having a leather covered lug, will have one made entirely of rubber, designed to permit a more perfect adjustment of the tire; and to prevent, in large measure, the possibility of a tire slipping or pulling off the rim. The rubber lug takes the place of 16 different styles of leather covered lugs which were used last season by this company in their different styles of tires. The new tire is also equipped with a bevel screw which will permit of a more secure tightening of the tire than was possible in the 1903 tire. Tires will also be fastened with a wrench instead of a thumbscrew, showing that every possible precaution will be taken to prevent accidents through tires pulling off or slipping when sharp turns are made. Moreover, the new tire is reinforced at every point where it is liable to be subjected to wear, and is calculated to stand the greatest possible strain on track or road without giving way.

The Goodyear Tire and Rubber Co., in addition to their regular clincher and single tube tires, which will be offered this season with practically no changes, are putting out a new tire, to be called the "flat tread" clincher, aimed to correct the tendency to slip on wet pavements or in making sharp turns. The company are also experimenting with a new tire, now being tested on a big touring car at Akron, by the use of which, the inventor claims, less power will be required for operating an automobile. The novel feature of the tire relates to the weaving of the fabric used.

The Dunlop motor tire for 1904 presents a decided new feature in construction. Its object is to facilitate the attachment and detachment of the outer cover, practice having shown this manipulation to be more difficult than in the case of the detachable cycle tire, on account of the greater size, weight, and thickness of the parts. The rim to which the new tire is adapt-

ed is a flat channel, either edge of which consists of a metal ring encircling the wheel; against these edges the wires of the tire cover impinge and obtain the bearing which holds the cover in place. Each ring has a turnbuckle, by means of which they are made larger or smaller in diameter, thus per-



NEW DUNLOP TIRE.
[Sectional Cut.]

mitting them to be slipped off, or clamped in position, as the case may be. With either ring removed, the tire may be pushed off the rim, easily and quickly, the only tool required being a small punchlike steel instrument with which to work the turnbuckle. A nail could be made to answer the purpose. A better fit of the tire is claimed, producing less friction and wear, and adding an element of safety. The tire does not have to be squeezed or pressed into place but after being taken off is

simply laid back in the groove and the detached rim fitted on. Incidentally, the new outer cover has been changed somewhat in section, which results in a better distribution of the tension on the cover and renders it less liable to puncture. The new Dunlop feature is made under a United States patent issued last year and is manufactured exclusively by the Hartford Rubber Works Co., which concern controls the patent. Numerous experiments were made at Hartford during the fall with the tire before it was placed on the market, and with the most satisfactory results. Among other things the tire was run 10 miles over in-

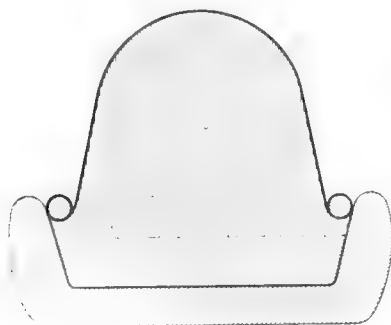


NEW DUNLOP TIRE.

[Tire on Rim, with one Retaining Ring Removed.]

different roads, absolutely deflated. The only evil result was that the tire crept to some extent and the valve stem was cut. These tires are being made very heavy on the tread and of a high quality of material, and are consequently rather expensive running from \$175 to \$240 per set.

The Manhattan Rubber Manufacturing Co. (New York) will actively push the MacMahon solid rubber vehicle tire this year. As shown in the accompanying sectional cut, this tire



MACMAHON TIRE.

is held in place by two longitudinal wires which run on the outside next to the rim flanges and fit over projections on the rubber. This gives a solid rubber tire without any holes for restraining wires, and one that can be run until it is worn down from the outside. The MacMahon tire is set in the channel

up in a fabric base, which is another distinctive feature. This is designed to do away with the tendency to escape from the retaining device which appears when more rubber than is actually necessary is forced into the channel. It also obviates any tendency to creep, and it permits the tire to carry its load naturally without being compressed against the rim flanges. It is claimed that the fabric base of this tire will remain practically in exactly the same position in which it is put on the wheel until the tread is entirely worn away. The tire weighs lighter than other tires of similar capacity, and therefore is comparatively less expensive. The tire is made in all standard sizes for vehicles, from the light road wagon to the heavy truck. It is made to fit the standard channel. There is no resetting necessary, for the tire holds throughout its life in the same shape and there is no wearing or cutting by wires.

The Tennant Auto-Tire Co. (Springfield, Ohio) are reported to be actively organizing their trade, for 1904, in the automobile tire patented by Irving Tennant and described in THE INDIA RUBBER



MORGAN & WRIGHT DETACHABLE TIRE.

WORLD of August 1, 1903 (page 428). The tread of this tire is protected against punctures by an annular flat metallic strip, lying between two layers of fabric. Manufacturing arrangements have been made with the Springfield Rubber Co.

The Fawkes rubber tire, which is being exploited from Denver and has been illustrated in THE INDIA RUBBER WORLD, will be exhibited at the Automobile shows. This belongs to the cushion type of tires, to which new additions are constantly being made, and it appears that this season will witness a more active campaign than for sometime past in behalf of tires of this class. It is recognized, of course, that the best pneumatic tire is liable to puncture in an emergency, and there are many automobilists who feel that the solid tires, while free not liable to punctures, do not afford sufficient resiliency.



NEW DIAMOND
TIRE LUG.

TIRES AT THE ENGLISH CYCLE SHOWS.

THE PALMER TYRE, LIMITED, exhibited at the Stanley show the most marked new feature of the season, in the shape of the "Palmer Cord" motor tire, a result of experiments for some years at the Silvertown works of the India-Rubber, Gutta-Percha, and Telegraph Works Co., Limited, the manufacturers of the Palmer cycle tires. The "Palmer" was the first tire in which was made the important departure of employing a specially designed fabric to obtain what was required in a pneumatic tire. The manufacturers have further developed the same principle in meeting the special wants in the way of a pneumatic tire for use on motors and other heavy vehicles. Uniformity of tensions in a motor tire has been recognized as a most important factor, and most difficult to obtain in a canvas lined tire. It has been found almost impossible, in building large tires, to so arrange that the threads (warp and weft) in the different layers of canvas shall be of equal tension everywhere, and one of the illustrations herewith (Figure 1) is intended to illustrate the distortion of a tire which results from the employment of ordinary methods of manufacture. An end aimed at in the manufacture of the Palmer Cord tire has been the arrangement of all the threads so that the strains are direct; there are no slack threads and the tensions on all the threads are uniform. This requirement has been found to be more easily met by the use of few than of many layers of fabric, and the standard Palmer construction now involves only two layers. In vulcanizing tires, it was discovered

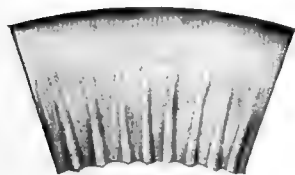


FIG. 1.

and thus causing weak places in the tire. As a result of such discovery, experiments were undertaken which have resulted in the production of a cord from which all air has been expelled. The cord used in the new Palmer tire is composed of a number of fine threads, each one of which has been individually treated by a patent process, the final result being a cord composed of 24 threads, each of which is insulated from every other thread by India-rubber applied in the form of solution, and from which the air has been expelled. A further step is the flattening of these built-up cords, in order to produce a fabric more compact than where round cords are used. Another illustration (Figure 2) shows the position of the cords

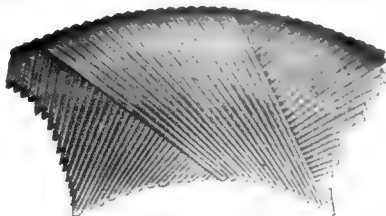


FIG. 2.



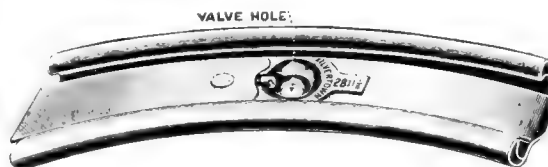
FIG. 3.

in the formation of a section of outer cover built up of two layers of flattened cord, indicating how, in spite of the circular form of the tire, an equal degree of tension is obtained throughout. The anchoring of the cord to the beaded edges of the tire cover is by means of steel pins passing through the loops of the cords and into the canvas bead. Two methods of attachment to the rim are (1) the ordinary clincher style, in rims fitted therefor; and (2) the flange fixing type illustrated herewith (Figure 3.)

The Palmer company exhibited also their detachable cycle tires, a sectional cut of which is shown herewith. Still another illustration relates to the Palmer tubular rims for cycle tires. Instead of using woven tape for covering the heads of the spoke nipples with this rim, a steel tape is supplied which forms a smooth surface to support the edges of the tire. The ends of this steel tape are secured by a special patented fastening, shown in one of the accompanying cuts.



PALMER DETACHABLE CYCLE TIRE.



FASTENING OF "SILVERTOWN" STEEL RIM TAPE.

STEEL TAPE FOR PALMER CYCLE TIRE.

THE CONTINENTAL CAOUTCHOUC AND GUTTAPERCHA CO. (London and Hanover, Germany).—Their exhibit of "Continental" motor tires included the set used by Mr. Jenatzy on the car with which he won the Gordon Bennett race last year; a full assortment of their standard tires; and numerous motor and cycle accessories made at their Hanover works. An illustration herewith gives a sectional view of the "Continental" tire for 1904.

THE CLIPPER PNEUMATIC TIRE CO., LIMITED (Cventry).—Bicycle tires, and the "Clipper-Continental" motor tire. The latter is made at Hanover by the Continental company and sold in Great Britain, under a license from the owners of the Bartlett-Clincher patent, the Clipper company being sole agent for the Continental company for motor goods.



CONTINENTAL TIRE.

THE DUNLOP PNEUMATIC TYRE CO., LIMITED (London—works at Birmingham) made exhibits at both the National and Stanley shows. The chief innovation for 1904 consists in a new and improved non slipping cover. Experience having proved the liability of the crevices in the tread of a tire to fill up, and of the design to become obliterated, the Dunlop company have decided to furnish a non slipping tread of longitudinal ridges, reinforced by transverse projections which prevent these ridges splaying apart and quickly wearing off. This effect is produced by molding the words "The Dunlop Tyre"



THE NEW DUNLOP TYRE.

[Made also with "Clincher" Attachment.]

at intervals round the tread of the cover, the letters of the name serving as the transverse projections which hold the ridges in position and minimize their wear. Besides producing an effective non slipping tread, a new means of identification of Dunlop tires is produced which may serve the company a good purpose in view of the new imitations of their tires likely to result from the expiration of their patents in the near future. Illustrations are shown here of a Dunlop cycle tire in each of the two types—"Dunlop-Welch" and "Bartlett" methods of attachment, one using wires and the other beaded edges in the tire cover—with the new tread markings.

The price of a pair of Dunlop cycle tires (cover $28' \times 1\frac{1}{2}'$) complete is now £2 5s. [= \$10.95]; in 1898 it was £4 [= \$19.45]. The price of an outer cover has declined meanwhile from 30 shillings to 17 shillings 3 pence.

The Dunlop tire was also shown in special makes for motor cycles and automobiles, together with various rubber accessories for cycling and automobiling.

The Dunlop inner tube is now molded in a circle, to the end that it may be at even tension at all points; the inner circumference is therefore not wrinkled nor the outer circumference stretched in putting the tire tube in place.

The company thus refer to an American invention for the curing of tires: "In 1901 a specialized method of manufacture was discovered, and the patents purchased by the Dunlop Tyre company. After making extensive tests in all countries and climates, over a period of 18 months, the company adopted this scientific method by which tire covers are made by patented machinery."

THE AVON INDIA RUBBER CO., LIMITED (Melksham, Wiltshire).—The "Avon" single tube motor tire, described as being in construction "similar to the American single tube tires"—though more durable—and adapted to "any American sin-

gle tube motor rims," but fitted with an English (Lucas) valve; molded under great pressure; Egyptian cotton used; attached to rim with 5 screws; made in one size only— $28' \times 2\frac{1}{2}'$. Also: Inner tubes for motor tires, in red and gray rubbers, molded in circular form; the "Coronation" solid rubber motor tire, molded and vulcanized in circular form; "Lovelace" non slipping tire treads; special vulcanizing process for pneumatic motor tires.

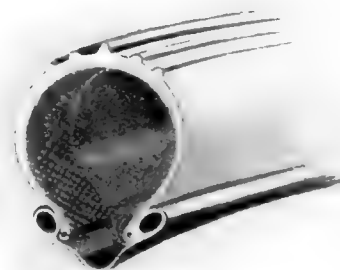
THE NORTH BRITISH RUBBER CO., LIMITED (Edinburgh).—Exhibited at both shows the "Bartlett-Clincher" tire, for cycles, motor cycles, and automobiles. Special attention was called to the motor cycle tire, constructed with a view to the peculiar needs for strength and resiliency in the equipment of this new class of vehicle. An illustration is given here of a section of the "A Won" tire for motor cycles.

THE MIDLAND RUBBER CO., LIMITED (Birmingham).—"Midland" and "British" detachable bicycle tires, fitted with endless wires, under the Dunlop-Welch patents; the "British" tire also made with beaded edge, under the Dunlop-Bartlett patents. Also: "Midland" pneumatic motor cycle tires. The tires are described as being made by "a patented vulcanizing process"—evidently meaning the American invention controlled in England by the Dunlop company.

THE CLIFTON RUBBER CO., LIMITED (Birmingham).—Exhibited tires manufactured under license from the Dunlop company—the "Wapshare," fitted with endless wires, and the "Clifton," with beaded edges, in place of the old Wapshare



NORTH BRITISH CLINCHER TIRE."



THE "WAPSHARE" TIRE.

tire attachment, where the wires extended through the rim and were fastened by screw nuts. Also: The "Clifton" detachable inner tube—a new article—made in a straight length, with two closed ends which interlock by inserting one within the other. It appears to possess special convenience for motor cycles, being removable from the outer cover without taking off the wheel.

LE PARIS TYRE CO., LIMITED (London).—"Le Pâris" patent double tube—not detachable—bicycle tire, with or without puncture proof band, especially for path racing. For 1904 single tube and detachable motor tires are announced.

THE TEXTILE GOODS MARKET.

THE price of raw material has reached an altitude not recorded since 1875, and there are predictions that cotton will go to 15 cents, and possibly higher, before a new crop comes on. A bale of spot "middling" cotton in New York at this writing is valued at 14.10 cents a pound, while at this time last year it was worth 8.85 cents, making a difference of \$26.25 a bale. The 14 cent mark was passed on December 28, when that price was bid for March, with all the later months up to August much higher. The "bull" leaders have millions of dollars at their back, while the "bears" have been greatly weakened by their heavy losses, and it seems to be a case where the "money makes the mare go."

The statistical position or any other factor is quickly swept aside by the tremendous manipulation of the bull faction. They have not hesitated to liquidate large accounts, for just as soon as the market was seen to sag a little they stepped in and buoyed it up by a spurt of buying. The manipulators take out their profits from time to time only to again invest them, and like a rolling snowball they increase in size. It is contended by many while admitting that the crop of cotton is short, the prices are too high for this time of the year, and yet they fail to suggest something that will break them. They hope to see them topple over from becoming top-heavy. Following are the prices of cotton middling upland spots at the leading ports:

	New York.	New Orleans.	Liverpool.
December 1	11.95 cents	11.50 cents	6.40d.
December 8	12.50 cents	12.25 cents	6.46d.
December 15	14.45 cents	12 ¹ / ₈ cents	6.74d.
December 22	13.30 cents	13 cents	7.06d.
December 29	14.10 cents	13 ⁵ / ₈ cents	7.46d.

The market for duck and sheeting has followed in the wake of staple cotton, although it cannot be said that the goods have advanced in proportion to the staple. The cotton duck mills have instructed their selling agents in this market to withdraw all prices, and to refrain from accepting contracts at current rates. About two thirds of the rubber trade using duck have made their yearly contracts, while the remainder are buying only for immediate requirements. In the latter case they are paying from 22 to 24 cents per pound, while those who made contracts a month ago secured their supplies for the year at 20¹/₂ cents.

The duck mills are closing up last year's contracts. They have enough cotton on hand to carry them along into the spring, or at least a sufficient quantity to cover the contracts in hand. This cotton was bought at below 10 cents, doubtless, and now that the manufacturers are compelled to pay approximately 14 cents, they are of course obliged to advance the price of their product.

The representative of a concern supplying the rubber trade with cotton duck said to an INDIA RUBBER WORLD reporter: "I have endeavored in a great many ways to persuade the rubber people to contract for their supply of cloth before the price advanced, as it seemed from every conceivable standpoint that cotton was to reach a high level before the spring, but these consumers sneered at the suggestion. I have recently received contracts from rubber mills for duck at 23 cents per pound, while the same goods were offered them a short time ago at 20¹/₂ cents. Of course, they admit that they made a mistake in not taking my advice, but they were the buyers and I was the seller and we were looking at prices from an entirely different standpoint. Then too, the rubber manufacturers are inclined to accuse us of being too narrow in respect to our credit system. If we have changed our method of extending credit, and are not as liberal as formerly, there is good reason for it, and it

certainly will not militate against their interests. Now that we have withdrawn our prices, consumers will be compelled to pay for what goods they take, as the withdrawal of prices does not necessarily mean that we will not contract to supply the consumers, but they will be compelled to pay a price based on the cost of cotton from which their goods are to be made."

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

	Pick.	Yds to Lb.	
36" Household Favorite.....			6 cents.
40" Household Favorite.....			6 ⁵ / ₈ cents.
36" Henrietta, L. L.....			5 ³ / ₈ cents.
36" Henrietta, H.....	(net)		5 ¹ / ₂ cents.
38 ³ / ₄ " Henrietta, S.....	(net)		5 cents.
40" Henrietta, P. W.....			7 ¹ / ₄ cents.
36" Florence C.....			4 ¹ / ₄ cents.
40" Majestic C. C.....	(net)		8 ¹ / ₄ cents.
40" Majestic B. B. B.....			7 ³ / ₄ cents.
40" Majestic B. B.....			7 ¹ / ₄ cents.
40" Norwood.....			5 ¹ / ₂ cents.
36" India, A. A. A.....			7 cents.
<i>Sheetings.</i>			
40" Hightgate... 6 ³ / ₄ c.	40" Selkirk... 8 c.	40" Shamrock... 10 c.	
40" Hightown... 7 c.	40" Sellow... 7 ³ / ₄ c.	<i>Ducks.</i>	
40" Hobart... 7 ¹ / ₄ c.	48" Mohawk... 11 c.	40" 7 oz. Cran-	
40" Kingstons... 8 c.	40" Marcus... 6 ¹ / ₂ c.	ford... 10 c.	
39" Stonyhurst... 6 c.	40" Mallory... 6 c.	40" 8 oz. Chart-	
39" Sorosis... 5 ³ / ₄ c.	36" Capstans... 4 ¹ / ₂ c.	res... 10 ¹ / ₂ c.	
40" Seefeld... 8 ³ / ₄ c.	<i>Osnaburgs.</i>	40" 10 oz. Carew... 13 c.	
	40" Iroquois... 10 c.	40" 11 oz. Carita... 14 c.	

HYDROCARBONS IN RUBBER COMPOUNDS.

THE term "hydrocarbon" is a convenient chemical designation for any compound containing only hydrogen and carbon. The use of the term is frequent in connection with the rubber industry, for the reason that certain groups of such bodies, both native and artificial, have been for years in common use as ingredients in rubber mixtures. Typical among such mixtures may be mentioned tar and pitch, from the destructive distillation of wood or bituminous coal, and, in more recent practice, the natural bitumens, such as Asphaltum ("mineral rubber"), Gilsonite, and other similar substances.

The adaptability of these substances to rubber compounding is due to their possessing to a greater or lesser degree certain physical resemblances to India-rubber—especially plasticity and low melting point. These characteristics permit the bitumens to be easily combined with rubber and earthy matters, and in this way they assist very considerably the mixing of what otherwise would be over-compounded and utterly unmixable stocks.

Being practically proof against oxidation and inert to chemical action, the presence of these hydrocarbons is entirely harmless in a rubber compound as affecting the life of the stock. They may be credited with actually having a beneficial effect, inasmuch as they not only add plasticity to the stock and retard its rapid drying before vulcanization, but they fill the space of, and thus exclude, much of the air which is always included, to a considerable extent, in every rubber mixing. By thus displacing air, which would otherwise be enclosed in the stock, the hydrocarbons practically lessen the internal oxidation of the cured rubber, and in consequence the life of the goods is lengthened.

While these hydrocarbon stocks have a recognized place and value in the rubber industry, they ought always to be considered as "assistants" or "doctors" rather than substitutes for rubber, which they are not. In employing them the manufacturer should do so with proper regard to the adaptability of the resulting compound to the purposes intended. Thus employed such materials have their legitimate uses, and may be regarded as valuable compounding ingredients.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: According to the statement of prominent rubber manufacturers in this city, the declining activity which has been noticeable for the past month or so in many other lines of trade has not materially affected the rubber branch. It will be remembered that the rubber manufacturers of Akron did not have a slack season the past summer, and the present comparative dullness makes up for the time which should have been slack and was not, and gives the manufacturers a chance to overhaul machinery. The rubber factories have enjoyed during 1903 the best trade in many years, and they do not object to being less busy just now. They do not believe that the period of quiet will continue beyond the stocktaking at the end of the year, and all are optimistic over the prospects for the season of 1904. Advance orders for tires have been received in such quantities that there is every reason to believe that next year will be a good one, and in other lines the rubber manufacturers here are confident in regard to the trade of 1904.

* * *

ATTENTION again has been called to the "blacklisting" case of Peter Kiefer, who sued the Diamond Rubber Co. for \$1,995, for the alleged act of the defendant in placing his and other names upon a blacklist, it being further alleged that this was done because they were members of a labor union. The Diamond Rubber Co. have filed another answer to the suit, in which they deny all the allegations of the complaint, except the ones which allege that the company are engaged in the manufacture of rubber goods, and that there are other companies of the same kind in Akron. They also acknowledge that the plaintiff was at one time an employé of the company, but is not now. As was mentioned in THE INDIA RUBBER WORLD, the company recently filed a demurrer to the suit, in which the company sought to have the evidence of the plaintiff thrown out and the case dismissed on the grounds that an employer should not be required to give a reason for discharging an employé, basing their contention upon a decision in the supreme court of this state in the case of Schaeffer v. the New York, Chicago and St. Louis Railroad Co. Judge A. R. Webber, before whom the demurrer was tried, conceded the right of the company to discharge employés without giving a reason therefor, but held that "employés have a right to organize for their mutual benefit," and therefore refused to prevent Kiefer from submitting his evidence in the case. The filing of the present answer was simply a customary legal procedure which has little or no bearing on the case.

* * *

JUDGE KOHLER, sitting in the court of common pleas at Akron, December 11, overruled the motion for a new trial in the action commenced by Addison McClurg against the Diamond Rubber Co., and set aside the decision of the jury which had awarded McClurg \$3000 damages. McClurg is suing the company for \$20,000 damages for injuries alleged to have been sustained in the plant of the defendant company. The jury awarded him \$3000, but Judge Kohler dismissed the verdict, stating that it was too small. In passing upon the motion he said: "To a young man of good habits, between the age of 21 and 25 years \$3000 is no just compensation for the loss of a right hand. If the jury had awarded the plaintiff \$10,000 I would not have interfered with the verdict. If the jury found that the plaintiffs were negligent, and I suppose that they did or they would not have returned a verdict for the plaintiffs, they should have done the young man justice, and returned a ver-

dict that would have compensated him for the loss of his hand."

* * *

AFTER an effort covering two years Colonel George T. Perkins, president of The B. F. Goodrich Co., has at last seen the consummation of his dearest wish. The city council has accepted a beautiful park which Colonel Perkins has been trying to present to the city for two years. During this time the proposition has twice been voted upon, adversely, but Colonel Perkins felt that eventually the Akron people would see the advantage of owning such a beautiful park, and that he was right is evidenced by the fact that favorable action looking toward the acquisition of the property has been taken. It consists of 76 acres, and is located on Perkins Hill southeast of the city. Just west of the park is the home of the late John Brown, the famous abolitionist, now used as a club house by the Portage Golf Club. Colonel Perkins's gift carries with it a stipulation for a macadamized road to cost \$20,000, and this was the stumbling block until now. Near the park are the beautiful homes of Mr. Bertram G. Work, vice president and general manager of the Goodrich company, Mr. R. P. Marvin, secretary of the company and Mr. C. B. Raymond, manager of the Akron plant of the American Hard Rubber Co.

* * *

MR. H. B. CAMP, president of the Camp and Faultless rubber companies, recently became interested in coal mining, and with other local capitalists purchased a large tract of coal lands in Perry county, in southern Ohio. Preparations were made to open a large mine, but when the railway which carries coal out of that district was asked to run a switch to the mine, it was found that the owners of the railway were in interest with the Continental Coal Co., owners of the other mines in that district, and the extension was refused. Mr. Camp and his associates thereupon quietly secured right of way for a steam railroad from Logan to McConnelsville, and have obtained a charter from the state for the Indian Run Railway Co., and it is proposed to build a road to give an outlet for the new coal mine. The incorporators of the railway company are H. B. Camp, his son L. W. Camp, F. M. Atterholt, G. P. Wise, and H. E. Andress, all of Akron. Once before Mr. Camp had trouble with a railroad company over rates and built the Ashland and Wooster railway, of which he was president, general manager, and superintendent. The road was operated at a profit for several years and then sold.

* * *

THE manufacture of rubber bowling balls promises to become an important feature of the hard rubber industry. THE INDIA RUBBER WORLD has already reported the work done in this direction by Joseph Dangel, superintendent of the Akron plant of the American Hard Rubber Co. When he first announced that he could turn out a ball which would be better than the *lignum vitae* balls in general use, bowlers were disposed to scoff, claiming that the balls would rebound when they struck the pins, thus making it impossible to do the execution of a *lignum vitae* ball. But being an enthusiastic bowler, as well as a practical rubber man, Mr. Dangel combined the knowledge he had gained in both pursuits in the manufacture of a rubber ball, and the results have justified his fondest hopes. Orders are now being received in good volume. Balls have come through the hard usage of two seasons with hardly a scratch, and apparently are as good to-day as when first turned out. The hard rubber ball does not shrink, and is guaranteed not to crack, and these features are the ones which cause the bowler a lot of trouble. A ball of wood which weighs 19 pounds when purchased will, before the end of the season, lose 4 or 5 pounds.

besides being much smaller than when new, while a rubber ball will retain its size and weight indefinitely. Since the American Bowling Congress have limited the weight of the ball to 16½ pounds, and the size as well, bowlers who use the *lignum vitae* ball have been considerably worried. It is a well known fact that the heavy ball makes large scores possible, and with a wood ball the weight can only be secured by loading the ball with lead, which requires the services of an expert. With the rubber ball any desired weight can be had, and this weight will be retained for years. A number of local bowlers are using the rubber balls, and orders from out of the city are being received. Local bowlers will take a large number of the balls to the national bowling tournament at Cleveland in February.

Mr. Dangel is also a member of the Akron city council, and at a recent meeting of that body, presented to the president of that body a beautiful gavel of hard rubber which he had made for the purpose.

* * *

THE "Diamond challenge cup" for manufacturers, offered by the Diamond Rubber Co., is creating a great deal of interest among automobile racers. It was last won by Mr. F. A. LaRoche at the second annual race meet of the Long Island Automobile Club at Brighton Beach, on October 31. For some time the cup had been in the possession of Tom Cooper, by whom it was won twice. The cup was also won once by Mr. Alexander Winton. It must be won three times before it becomes the property of the winner. The cup is valued at \$250.

* * *

THE promoters of the Superior Rubber and Manufacturing Co., at Cuyahoga Falls, have promised that the plant will be placed in operation by the first of the year. For some time workmen have been engaged in placing machinery in place, and it had been expected that the plant would be in operation long before this. Announcement is now made that the plumbing and steam heating apparatus have been installed, and that as soon as all the machinery that is now in place, work will be started.

* * *

THE Federal Rubber Co. is the name of a new company, just organized by Akron men, to manufacture dipped goods on a small scale. It has been capitalized at \$15,000, and the incorporators are Frank E. Ream, John F. Halderman, Harry Boyer, W. R. Griswold, and M. F. Boerstler. The incorporators are not ready to tell of their plans further than that they will secure a factory building here which has stood idle for some time, and equip it with rubber machinery. The company has been incorporated under Ohio laws.

* * *

THE Diamond Rubber Co.'s hard rubber department is reported by Mr. J. R. Bailey, its superintendent, as doing all the work that can be taken care of with the present equipment. This branch was started as an experiment, but has become a profitable department of the company's factory.

* * *

THE American Hard Rubber Co. make every year large quantities of supplies for the Edison Storage Battery Co., and a large part of the yearly output is made at the Akron plant of the company. The statement is made that one contract alone calls for rubber goods to the amount of almost \$250,000 a year.

* * *

MR. A. H. MARKS, vice president and general manager of the Diamond Rubber Co., has returned from Europe. He was in Liverpool, where he attended the annual meeting of the Northwestern Rubber Co., Limited, of which he was reëlected president. Mr. O. C. Barber, a director of the Diamond Rubber

Co., was also reëlected director in the Northwestern company. The latter company has been in operation but a year, but Mr. Marks states that its business is very satisfactory, and is constantly increasing. According to Mr. Marks, an all-absorbing topic in England at present is the fiscal question, and he is of the opinion that Mr. Chamberlain, with his protective tariff scheme, will win.

* * *

CHARLES AMMERMAN, president of the Lilly Rubber Manufacturing Co., of Barberton, has disposed of his stock in the First National Bank, of that place, and has been succeeded by F. Keifer as president of the institution. Mr. Ammerman, who is a prominent member of the Summit County Bar Association, is one of the most prominent business men of Barberton, being connected with a number of the business enterprises which have made that an important manufacturing city.

* * *

SOME time about the first of the year the Faultless and Camp rubber companies will be consolidated under the name of the Faultless Rubber Co. The Faultless plant is located in Akron and the plant of the Camp Rubber Co. at Ashland, Ohio. Both companies being controlled by the same people, it has been decided to combine them so that the management may be more economically conducted. Mr. H. B. Camp, of Akron, is president of both companies, and Mr. T. W. Miller treasurer and general manager of both. Mr. Miller stated to THE INDIA RUBBER WORLD correspondent that it is not the purpose of the company to make any changes in the management of the two plants, but that the business of both concerns will be conducted from one office. The new company will be capitalized at \$325,000, and incorporated under the laws of Ohio. The Camp Rubber Co. makes a specialty of manufacturing rubber horse collars, and since its organization the growth of its business has been phenomenal. It is stated that on account of the growth of the business of the company which uses the rubber collars it may be removed from Holland, Michigan, to Ashland, to be near the source of supply. Mr. Miller states that the company is 200,000 behind its orders at the present time.

* * *

THE Firestone Tire and Rubber Co. are understood to have a good trade in Cuba. Mr. S. G. Carkhuff, of this company, lately returned from a stay of several weeks in Cuba, during which he contracted with their resident agent for the delivery in 1904 of a large number of vehicle tires. Many rubber tires are already used in the new republic, and the Firestone company have made a special bid for this trade by supplying a "side wire" solid tire that has a broader tread and is a little heavier than the tires used in the United States. In order to take care of their growing trade, the Firestone company are building an addition to their plant, 60×40 feet, to be used as a warehouse and shipping room, which, when completed, will give them a building 210×75 feet.

SOMEBODY in giving an account of how footballs are made, after going into the details of the preparation of the leather cover, says: "The outer cover is now ready for the bladder. This is made of the best Pará rubber, and involves even more care in its construction than the leather cover itself. It is of immense strength, and is an expensive item, representing nearly half the cost of manufacture. The next operation is the inflation of the ball. This is done in a second by machinery, and then the ball is laced up. However, even yet it is not complete, for it still has to pass through the hands of the shaper, who pats down any inequalities in the seams or contour of the ball."

NEWS OF THE AMERICAN RUBBER TRADE.

THE INDIA RUBBER CO. (NEW BRUNSWICK, N. J.)

THIS new company, incorporated in July last, with \$500,000 capital, to succeed to the business of the India Rubber Co. of Akron, Ohio (burned out in March), will begin active operations on January 5, having remodelled the factory of the old New Brunswick Rubber Co. The new plant is one of the completest in its class, and it is the most modern in its equipment. All of the machinery, both for making tires and mechanical rubber goods is new and up to date and constructed with especial view to safety and speed. The plant will start operations with 350 workmen, which number it is expected will be increased before a great while. John Rathers will be the superintendent of the mechanical goods department and Frank Donnell the manager of the same department. The production will include a general line of mechanical goods. The company will be ready to offer a novelty in tires at the automobile shows.

THE PENNSYLVANIA RUBBER CO. WIN.

WHEN the Pennsylvania Rubber Co. began the manufacture of double tube bicycle tires, they were sued by Morgan & Wright for alleged infringement of their patent No. 502,047, of July 25, 1893, covering the method of closing the ends of inner tube tires. In January, 1903, Judge Buffington, in the United States circuit court for the western district of Pennsylvania, at Erie, rendered an adverse decision, holding that the Pennsylvania company had "found a different method of closure, and such mode is not by a flattened end." An appeal was taken by Morgan & Wright, and on December 7 a decision was handed down by the United States circuit court of appeals at Philadelphia, affirming the decision of Judge Buffington. In a number of suits previously brought by Morgan & Wright against various rubber tire manufacturers, decisions were rendered in their favor, but in the latest case the defendants have been successful in presenting a method of manufacture that is held not to infringe the Morgan & Wright patent. As the matter now stands, this firm and the Pennsylvania Rubber Co. seem to control the field in double tube bicycle tires.

CONSOLIDATED RUBBER TIRE CO.

A CIRCULAR has been issued by Russell H. Landale, an attorney, at No. 170 Broadway, New York, to the debenture holders and shareholders of this company, announcing the abandonment of a project for the reorganization of this company proposed in June last. Such reorganization being impracticable without the cooperation of a majority of the bondholders as well as of the shareholders, and the holders of a majority of both classes of securities being unwilling to deposit the same, the plan has been abandoned. The idea was to substitute shares for the debentures, and to scale the amount of both common and preferred stock. Since the issuance of the Landale circular there has been a decided improvement in the market value of the bonds, and the holders feel more encouraged as to the future of the company.

THE G & J TIRE CO.

HAROLD O. SMITH has been elected president of The G & J Tire Co. (Indianapolis, Indiana), having held this office prior to October, 1902, when it was filled by the election of Lewis D. Parker. Mr. Parker lately resigned the position, to devote his attention more closely to the affairs of the Hartford Rubber Works Co., of which he is the president. J. D. Anderson, who

has been identified with The G & J Tire Co. for some time, after having been connected with the Hartford company, has been elected vice president, treasurer, and general manager of the company.

BOSTON STANDARD RUBBER CO.

THE above company have purchased the plant at Campello, Massachusetts, operated prior to 1901 by the Standard Rubber Co., and acquired in that year by the New York firm of Cavanaugh Brothers & Knapp, who have since continued the business under the style of the Standard Rubber and Oilcloth Co. The plant is being enlarged and will be devoted to proofing cloth and to the manufacture of rubber specialties.

THE COMING AUTOMOBILE SHOWS.

THE fourth annual automobile show under the auspices of the Automobile Club of America, and the National Association of Automobile Manufacturers, will be held at Madison Square Garden, New York, January 16-23. The interest in the coming show is widespread, the applications for space from manufacturers of automobiles and accessories pointing to a more extensive exhibition than even that of last year. Last year there were 143 exhibitors, of whom 76 showed completed vehicles. Up to date space has been allotted to 155 exhibitors, of whom 89 will show complete automobiles. The rubber tire trade promises to be well represented, the following manufacturers having obtained space at last accounts:

Continental Caoutchouc Co.....	New York.
Diamond Rubber Co.....	Akron, Ohio.
Firestone Tire and Rubber Co.....	Akron, Ohio.
Fisk Rubber Co.....	Chicopee Falls, Mass.
G & J Tire Co.....	Indianapolis, Indiana.
B. F. Goodrich Co.....	Akron, Ohio.
Goodyear Tire and Rubber Co.....	Akron, Ohio.
Hartford Rubber Works Co.....	Hartford, Connecticut.
Morgan & Wright.....	Chicago.

Also:

Stodder Tire Co.....	New York.
Whalebone Rubber Co.....	New York.

The Chicago automobile show will follow, on February 6-13, when most of the rubber companies named above will be represented.

MALDEN BOOTMAKERS' ASSOCIATION.

THE first annual concert and ball of the Bootmakers' Relief Association of the Boston Rubber Shoe Co., Factory No. 1, at Malden, Mass., was held on the evening of November 25, in the Malden Auditorium Hall. THE INDIA RUBBER WORLD has been favored with a copy of a "Souvenir Book and Program," of the occasion, the same comprising 24 pages, with portraits of the officers of the company, and employees prominent in the organization. This association was formed April 8, 1896, for purposes of mutual benefit. There is now a membership of 116, and during seven years over \$1600 has been paid out in relief to sick or disabled members. Charles A. Christianson is president; Michael T. Rooney, vice-president; Lewis E. Bennett, secretary; and Frank M. Hungerford, treasurer. Over 200 couples attended the ball, besides several officials of the company.

ANNIVERSARY OF A ST. LOUIS SHOE HOUSE.

THE Brown Shoe Co. (St. Louis) early in the month celebrated their twenty-fifth anniversary, in connection with which some interesting details of the history of the house were made public. In 1878 the copartnership of Bryan, Brown & Co. was formed, with \$12,000 capital, to manufacture shoes in St. Louis

and engage in wholesaling shoes. Their first year's business totaled \$110,000. In 1881 the business was incorporated, with \$60,000 capital, since which time every year has shown an increase of business. In 1893 the corporate name of the company was changed to The Brown Shoe Co. The full paid capital is now \$1,000,000, and it is stated that the shipments this year will exceed \$5,000,000 in value. Mr. George Warren Brown, the founder of the business, is still at its head, as president of the corporation. The shoes made by the company are sold not only over the greater part of the United States, but also in several foreign countries. The company have an important rubber department, handling the "Goodyear Glove" and "Jersey" brands, on which their business is one of the best in the West.

AMERICAN TUBING AND WEBBING CO.

THE property of this company and its business, as a going concern, was offered at public sale at Providence, by the receivers, on December 1. The purchaser was Joseph W. Green, Jr., treasurer of the Glendall Elastic Fabrics Co., of Easthampton, Massachusetts, and the total price bid was \$151,475. The plant brought \$96,000; the stock in the webbing department, \$52,900; tubing stock, \$2025; braiding stock, \$450. There being no bids for certain lots belonging to the company in another part of town, their sale was postponed. The operation of the plant, under the old name, will be continued by the new owners. The weaving department, employing about 200 men, resumed operations on December 14, and the finishing department, with 100 employes, on December 21. Employes of the old company were given the preference. George Astell, connected formerly with the Easthampton plant, has been appointed superintendent of the plant at Providence. There have been a number of hearings in the case of Dresser & Co., the New York commission merchants whose failure led to the change in the affairs of the above company, but they have not yet been granted a discharge in bankruptcy.

THE CROCKER RUBBER STORES.

ISAAC CROCKER, who for some years past has been president and general manager of the three retail rubber stores—

Hope Rubber Co., Providence, Rhode Island,
Lawrence Rubber Co., Lawrence, Massachusetts,
Lowell Rubber Co., Lowell, Massachusetts—

has recently been elected treasurer of the above companies, in addition to his former position. Mr. Crocker first began his connection with the rubber business in Lowell on November 30, 1881, under the management of Granville Hayward, brother of the late J. Francis Hayward, who was formerly the owner of the three stores mentioned above.

RUBBER SHOE PRICES.

THE United States Rubber Co. issued a circular to their customers, under date of December 16, announcing: "We have thought best to defer for the present the announcement of our prices for the coming season, and shall not be prepared to make known our discounts, terms, etc., until some date after January 1, 1904. As soon as the company determines on the policy for the future, we will advise you of the situation. Until further

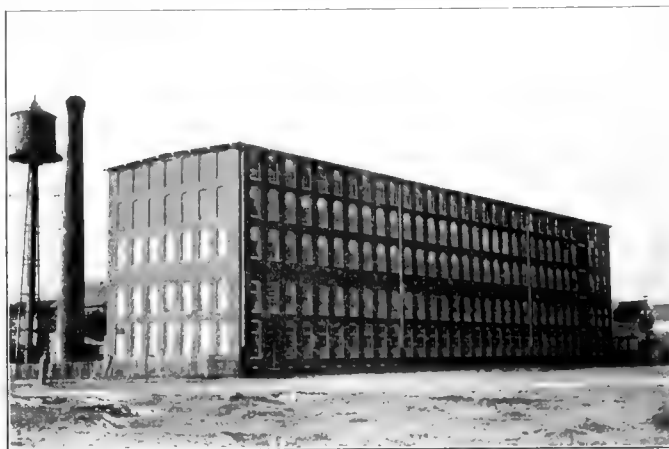
notice it will be our pleasure to supply your wants, as far as possible, under the terms of the contract now in force. It is a source of gratification to know that the present season has been in volume of business and profit, satisfactory to our customers, and we hope the coming season will exceed the past in this respect."

A NOVELTY IN GARDEN HOSE.

ONE of the novelties of the season is the new garden hose offered by the Boston Woven Hose and Rubber Co. under the brand "Thoroughbred." In construction the hose is strong and serviceable and in appearance it is a work of art. The jacket is woven with black cotton, through which runs a spiral line of red, white, and blue. The couplings are of special pattern, heavy and ornamental, and the smooth attaching band is engraved with the company's name. It is a handsome piece of goods and will make a fine appearance on any well kept lawn.

RECEIVER FOR THE INTERNATIONAL RUBBER MFG. CO.

IN the chancery court of New Jersey, at Jersey City, on December 7, William T. Baird, of South Orange, was appointed receiver for the above company, having a mechanical goods and tire factory in Jersey City and offices at No. 136 Liberty street, New York. The appointment of Mr. Baird was confirmed by Chancellor Stevens on December 21. At a meeting of creditors on December 15, a committee composed of Charles H. Arnold, Henry A. Gould, and Sidney H. March, was appointed to investigate the condition of the company and report on the best plans for protecting the rights of the creditors. At the meeting of creditors \$150,000 out of a total of \$152,000 indebtedness was represented. The nominal assets are reported at about \$93,000. The International company was incorporated in



AMERICAN TUBING AND WEBBING CO.

[Factory at Providence, Rhode Island, which has changed ownership.]

New Jersey in September, 1902, with \$100,000 capital reported, and had been in operation for less than a year. Tires were the principal product.—Later Hays & Hershfield, attorneys of New York, filed a petition in bankruptcy against the International company, on behalf of these creditors: Jefferson Bank, \$2100; Henry R. Worthington, \$870; H. L. Herbert & Co., \$80. They are dissatisfied with the insolvency proceedings brought in the New Jersey state court.

WHAT BECOMES OF WORN OUT FIRE HOSE.

THE disposal of worn out equipment by the fire department of the city of New York is managed as systematically as the purchase of new supplies, as witness an advertisement in a late issue of the official *City Record*, wherein 39 lots of engines, hose, and other supplies are advertised for public sale to the highest bidders. There are included 197 lengths of old cotton hose, 82 lengths of old rubber hose, about 2000 pounds of rubber tires and one lot of "scrap rubber."

WESTERN FIRE HOSE FOR NEW YORK.

AN important order for fire department hose for the city of New York has been secured by the Republic Rubber Co. (Youngstown, Ohio). The specifications, in this instance, deviated from the usual practice of the New York fire department, in that, instead of being so worded as to point to particular brands of hose, the bidding was open to all, though a high

standard was required. A contract for the whole amount of rubber fire hose for which bids were opened on November 9 was awarded to the Republic company over seven competitors, and delivery of the hose is to be completed within 60 days of the date named. The hose called for comprised 10,000 feet 1½ inches in diameter, 36,000 feet 2½ inches, and 3000 feet 3 inches in diameter—total, 49,000 feet.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Nov. 28	250	9	9	400	36½	35½
Week ending Dec. 5	1,147	10	9	1,160	39¾	35¾
Week ending Dec. 12	400	10¾	10	400	40	39
Week ending Dec. 19	500	10	10	500	40	39½
Week ending Dec. 26	455	10½	10½	200	39½	39½

RANGE FOR TWO YEARS.

	Common.		Preferred.	
1902.....	High 19½	Low 14	High 64	Low 49½
1903.....	19½	7	58	30¾

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Nov. 28	200	14½	14½	365	70	67
Week ending Dec. 5	4,980	16½	14½	2,700	73	72
Week ending Dec. 12	11,790	19½	16¾	770	72¾	72
Week ending Dec. 19	4,760	18¾	16¼	413	72	72
Week ending Dec. 26	1,050	18	17½	310	72	71

RANGE FOR TWO YEARS.

	Common.		Preferred.	
1902.....	High 25½	Low 17¼	High 74	Low 63
1903.....	30	12	84½	60

THE CABLE RUBBER CO. PLANT FOR SALE.

THERE is announced for sale, by the trustees in bankruptcy of the Cable Rubber Co., the entire plant, stock, and other assets of the estate, including the buildings on Brookside avenue, Jamaica Plain, Boston; adequate mechanical equipment, all in good condition and much of it practically new; and a considerable supply of raw materials and some manufactured products. The plant has not been in operation since the assignment of the company July 15, 1903. Further details regarding the sale appear in the advertising columns of this Journal.

THE "EUREKA" TRADEMARK SUIT.

TRIAL of the suit of the Eureka Fire Hose Co. against the Eureka Rubber Manufacturing Co. of Trenton, N. J., to have the latter permanently enjoined from the use of the word "Eureka" as a part of their corporate title and as a trademark for their products, mentioned in THE INDIA RUBBER WORLD of July 1, 1903 (page 350), was begun on December 21 before Vice Chancellor Emery, at Newark, New Jersey. Both companies are incorporated under New Jersey laws. The complainant's bill shows that their use of the word "Eureka" was begun in 1875, when their business was first established, under the laws of New York, and that the incorporation was transferred to New Jersey December 28, 1899. The Eureka Rubber Manufacturing Co. of Trenton, N. J. was incorporated July 15, 1902. The complainants assert that the word "Eureka" had been duly registered by them as a trademark and that, upon the organization of the defendant company, they protested against the use by the latter of the name "Eureka," and called attention to the statutes pertaining to trademarks. The answer of the defendants is a denial that the complainants have valid and exclusive title to the use of the word "Eureka," as claimed,

and the controversy before the court will assume the phase of a test suit of trademark laws of great significance to manufacturers. The taking of testimony was continued during the week, after which there was an adjournment to February 10, when the case is to be heard continuously until concluded.

THE COMBINATION RUBBER AND BELTING CO.

[See THE INDIA RUBBER WORLD, November 1, 1903—page 59.]

SCHEDULES in bankruptcy were filed on December 2, showing liabilities of \$286,284.52, and assets of \$97,231.87. The referee will next call a first meeting of creditors for the election of a trustee, of which due notice will be sent to the parties concerned.

NEW INCORPORATIONS.

THE Dayton Rubber Co. (Dayton, Ohio), December 9, 1903, under Ohio laws, to manufacture rubber goods; capital, \$250,000. Incorporators: William S. Huffman, Albert T. Holt, Claude C. Hooven, Harrie N. Reynolds, Nathaniel P. Ramsey, Oscar F. Davieson. Tires and pneumatic air cushions are mentioned as intended specialties of the new company's production.—In July last several of the persons above named filed incorporation papers in New Jersey, for the Dayton Rubber Manufacturing Co., and the Ohio corporation is to take the place of the former project.—Mr. Davieson has been elected president, Mr. Ramsey vice president, Mr. Huffman secretary, and Mr. Hooven treasurer. The factory management will be in charge of Mr. Holt and the selling department in charge of Mr. Huffman.

=Langill Fountain Pen and Brush Co., December 17, 1903, under New Jersey laws, to manufacture fountain pens; capital, \$100,000. Incorporators: John T. Langill and John E. Langill, Brooklyn; Alexander M. Lowry, New York city. Registered office: No. 76 Montgomery street, Jersey City.

=Smith & Longyear Co., December 15, 1903, under New York laws, to deal in waterproof materials; capital, \$25,000. Directors: A. F. Smith, P. D. Longyear, and W. H. Smith—all of New York city.

TRADE NEWS NOTES.

THE regular semi-annual dividend of \$3 per share on the preferred stock of the Boston Woven Hose and Rubber Co. was payable on December 15, to shareholders of record of December 10.

=The Diamond Rubber Co. have had registered in Chicago a lease of the premises No. 167-169 Lake street, now occupied by them for their business in Chicago, for a term of years, for \$24,000. In an interview with an INDIA RUBBER WORLD representative, their manager reports that the year's trade has been very satisfactory. The demand for automobile tires has been exceedingly good, while the bicycle tire business has more than held its own.

=The blowing out of two cylinder heads at the factory of the Goodyear's Metallic Rubber Shoe Co. (Naugatuck, Connecticut) on December 9, caused a suspension of work for two days.

=The Alling Rubber Co. (New Haven, Connecticut) have filed with the secretary of state a certificate of increase of capital stock from \$24,000 to \$30,000, to cover the business which this corporation is doing in New Haven, Meriden, and Bridgeport.

=In a letter to Morris & Co. (Yardville, New Jersey), in regard to their spring bottom baskets, the New York Rubber Co. wrote recently: "In reply to your inquiry as to what we use duck baskets for, would say that they are generally used for balls and toys. They give us very good satisfaction and we think they are great floor savers. We cheerfully recommend them to all wanting baskets of that kind where they have to be dragged over the floors."

=The two factories of the Woonsocket Rubber Co. were reported recently to be employing about 1850 hands, of whom 1100 were at work in the "Alice" mill, and 750 at Millville. The daily ticket was about 12,000 pairs of shoes and 4800 pairs of boots. Both mills were running steadily and the company were advertising for additional help.

=The Beacon Falls Rubber Shoe Co. (Beacon Falls, Conn.), having been mentioned as having under way a reclaiming plant, they advise THE INDIA RUBBER WORLD that what they are putting up is a small building in which to recover unvulcanized scrap. As this is an acid treatment, it was thought best to locate the plant outside of their main buildings.

=The first shipment of rubber shoes from the new factory of Terrence McCarty, at Bristol, Rhode Island, was made to Boston, on December 2.

=The Plymouth Rubber Co. (Stoughton, Massachusetts) recently purchased some real estate near their factory, with a view, it is understood, to building an extension in the near future.

=The Hartford Rubber Works Co. have lately added a 900 H.P. Corliss engine to their factory at Hartford.

=The Corona Rubber Co., Limited, of Montreal, the incorporation of which was reported in the November issue of this Journal, have acquired the plant of the late Strathcona Rubber Co., at Nos. 200-208 Papineau avenue, and taken up the business of proofing cloth for the waterproof clothing trade.

=Dana Webster, for some time past assistant superintendent at the factory of the Hartford Rubber Works Co., has accepted a similar position with The India Rubber Co., the new company operating at New Brunswick, New Jersey.

=From present indications the factories of the United States Rubber Co. at Naugatuck will continue busy all winter. These factories have been run at high pressure for the past three years, and this winter the employes have not had even a full week's shutdown for the holidays.

=Not many years ago all fruitjar rings were packed in barrels. The first rings offered in packages were in strawboard tubes which contained a gross of rings. The Boston Woven Hose and Rubber Co. have led in the movement to furnish packages, and their line this year contains five grades that are packed in embossed boxes containing one dozen rings, and three grades that are packed in cartons containing one pound. The cartons are appropriately labelled with handsome lithographs.

=The New York Belting and Packing Co., Limited, have removed their San Francisco branch to Nos. 605-607 Mission street.

=The sixth annual meeting of the Western Association of Shoe Jobbers will be held in St. Louis, on January 5 and 6, on which occasion the rubber shoe trade, as usual, will be liberally represented. The program provides for separate meetings of the jobbers handling each of the leading brands of rubbers, including the Western Association of Hood Rubber Co.'s Jobbers.

=The Fall River (Massachusetts) Rubber Co. was damaged by a fire which started in a neighboring dry goods store on the evening of December 11. The loss has been determined by the insurance adjusters at \$1650.

=The production of the Boston Rubber Shoe Co. in one week recently was 25,500 pairs of boots and 259,500 pairs of shoes—total, 285,000 pairs. The number of employes was 3100 and the pay roll \$31,000.

=At an auction sale of securities at Philadelphia on December 17, one lot of 700 shares of Pneumatic Horse Collar brought \$1.10, and a lot of 100 shares brought 10 cents. The Stock Exchange price in 1899 was \$3 per share.

=The plant of the Monarch Rubber Co. (Campello, Massachusetts) is being enlarged, with the view to adding new lines of production.

=The Boston Belting Co.'s regular quarterly dividend No. 137, of \$2 per share, was payable on January 1 to holders of record at the close of business on December 15.

=The Franklin Rubber Co. (Boston) have obtained permission from the aldermen of Malden to erect an addition to their factory on Eastern avenue, in that city.

=The Apsley Rubber Co. (Hudson, Massachusetts) were reported lately to be working a larger shoe ticket than at any previous date.

=In May last an effort was made by the United States postal authorities to convict one James B. Kellogg of using the mails with fraudulent intent, in connection with the so called International Wheel, Tire, and Rubber Co. This charge was not sustained, but other charges of fraud already pending against Kellogg were proved against him, and on December 9 he entered the New York state prison at Sing Sing, to serve a term of imprisonment of 18 months.

=Mr. George B. Spencer has resigned as manager of the sundries department of The Goodyear Tire and Rubber Co. (Akron, Ohio), to date from January 1, to devote his attention to his interests in rubber in another direction.

=The Eureka Rubber Manufacturing Co., of Trenton, New Jersey, while not having given special attention to the fire hose trade, has received some orders of late, including one for 2000 feet for the city of Yonkers, New York.

=The Faultless Rubber Co., of Akron and Ashland, Ohio, was incorporated at Columbus, Ohio, on December 24, with \$225,000 capital, by T. W. Miller, H. W. Camp, Roy Miller, T. M. Gregory, and H. E. Andress. The nature of the business of the new corporation will be found set forth in detail in the Akron correspondence on another page of this paper.

=The first calendar for 1904 that reaches us arrives with the compliments of the Consolidated Rubber Tire Co. (New York and Akron, Ohio), manufacturers of the Kelly-Springfield tire. This calendar comprises six leaves of heavy paper, 10 x 12½ inches, each designed for two months, and each containing an attractive picture in colors.

=The Stamford (Connecticut) Rubber Supply Co. send us an attractive calendar for 1904 which, suspended over the rubber man's desk, will serve as a pleasant reminder throughout the year of the business of this company in rubber substitutes.

=Messrs. John Royle & Sons (Paterson, New Jersey) are sending to their friends this year, as usual, a handsome pocket memorandum book, with spaces for every day in the year, a calendar, and data useful for reference, not forgetting a mention of the machinery which they produce, for the use of the rubber and other industries.

=The regular quarterly dividend of 1½ per cent. on American Chicle Co. preferred is payable on January 2, and the regular monthly dividend of 1 per cent. on the ordinary shares on January 20.

=Mr. Fred A. Plum has joined the selling forces of the Voorhees Rubber Manufacturing Co., dating from January 1, and will look after his friends in the trade in the states of New York and Pennsylvania. Mr. Plum, in a former connection, was for more than twenty-five years closely associated with Mr. Voorhees, and it seems natural that they should again be allied in business. The Voorhees Rubber Manufacturing Co. have been very successful ever since their beginning in business in 1898, having now one of the best equipped factories in the country, and the addition of Mr. Plum to their forces is another evidence of their good business judgment.

PERSONAL MENTION.

THE many friends in the rubber trade of Dr. H. C. Corson, formerly vice president of The B. F. Goodrich Co., will learn with regret that news has reached Akron that he is in Paris undergoing treatment for a serious affection of his eyes.

=Mr. George M. Allerton, of the Seamless Rubber Co., had a narrow escape from serious injury at the railroad depot at Naugatuck, Conn., on the evening of December 18. He attempted to alight while the train was still in motion, and lost his footing but not his hold upon the car rail, and was dragged along the platform for a considerable distance.

=Mr. Andrew H. Brown, of the New York offices of the United States Rubber Co., and Miss Bertha Robinson Shute, of Malden, Massachusetts, were married in the latter city on December 22.

=Dr. Carl Otto Weber, of Manchester, England, who is now in the United States for a prolonged stay in the promotion of his professional work, recently delivered by invitation, before the American Chemical Society, an address on "The Application of Scientific Data to India-Rubber Manufacturing."

=One of the features of the thirty-sixth annual reunion of the Fifty-first Massachusetts regiment of Volunteers in the civil war, at Worcester, Massachusetts, on December 22, was the reading by General A. B. R. Sprague, the old commander of the regiment, of a tribute to Lieutenant Colonel John M. Studley who served with that regiment. Colonel Studley died on April 10, 1903, at Providence, Rhode Island, where he has been engaged for a number of years in the rubber business, his obituary appearing in THE INDIA RUBBER WORLD of May 1, 1903 (page 273). At the same meeting a life sized portrait of General Sprague was presented to the Worcester Mechanics' Association,

to hang with those of other celebrities in Mechanics' Hall. One of the notable figures at the banquet was Governor Lucius C. F. Garvin, of Rhode Island, who enlisted with the regiment at the beginning and remained in its ranks until it was disbanded. The name of Colonel Studley, during the proceedings, was constantly coupled with that of General Sprague, and again and again was singled out for the warmest appreciation by the different speakers.

THE SITUATION ON THE ACRE.

THE treaty between Brazil and Bolivia respecting the Acre territory, the details of which have been reported in previous issues of THE INDIA RUBBER WORLD, was signed at Rio de Janeiro on November 21 by the representatives of the two powers. The Bolivian commissioner at once set out for his capital, La Paz, expecting to reach there by December 15, when the treaty would at once and simultaneously be placed before the Brazilian and Bolivian congresses for ratification. A latter report says the treaty has been ratified.

The Pará newspaper, *A Folha do Norte*, says that the occupation of Acre since the beginning of the disturbance has cost Brazil 9,000,000 *milreis* [= \$2,189,925], of which more than 1,500,000 *milreis* has been paid to the Amazon Steam Navigation Co. for transportation of troops and supplies.

THE Republic Development Co., contractors for the plantation "San Silverio el Obispo," (Obispo Rubber Plantation Co.) announce the earnings from that property for the year 1903 as 8 per cent., payable January 2, 1904, to share-contract holders of record December 15, 1903.

REVIEW OF THE CRUDE RUBBER MARKET.

THE market has been without notable change since our last report. Toward the end of the year, which is the usual season for stock taking by rubber manufacturers, and of repairs at the works, there is seldom any pressure to buy, and the rule holds good at the present time. The market has preserved a distinct firmness, however, in the face of somewhat larger receipts at Pará than last year, and larger than in any preceding year, with one exception. There have been larger receipts likewise at Antwerp—now the largest single market for African sorts—but while visible supplies of rubber are now larger than for some time past, the increase in stocks has not been commensurate with the larger arrivals.

Consumption has continued active throughout the year, and all indications point to continued activity, at least for some months to come. The consumption of rubber in the United States has been phenomenal, in which connection may be introduced the official import returns of imports of raw material for the first eleven months of three years past, as follows:

	Pounds.	Value.
January-November, 1901.....	50,096,203	\$25,729,334
January-November, 1902.....	46,007,428	22,568,786
January-November, 1903.....	50,868,845	31,960,432

Here it will be seen that not only have the imports for eleven months of 1903 been larger than in any preceding year, but the money value of the imports has been more than \$6,000,000 greater than for the same period of 1901. Our imports, by the way, are mainly for home consumption with the exception of the amounts delivered to Canadian manufacturers.

The following table shows the arrivals of rubber at Pará from the beginning of the current crop season to the end of

each month thus far, compared with the corresponding periods of three years past. Only in one preceding year—1901—have the arrivals been greater at the end of December. The figures follow:

	1900.	1901.	1902.	1903.
To July 31.....tons	860	1,260	1,290	1,280
" August 31.....	2,150	2,550	2,660	2,510
" September 30.....	3,430	4,490	4,330	4,520
" October 31.....	5,780	7,130	6,610	6,960
" November 30.....	7,980	10,100	9,260	9,940
" December 31.....	11,300	13,630	12,250	13,290

[a—To December 29, 1903.]

Following is a statement of prices of Pará grades, one year ago, one month ago, and on December 30—the current date:

PARA.	Jan 1, '03.	Dec. 1, '03.	Dec. 30.
Islands, fine, new.....	88@89	92@ 93	90@ 91
Islands, fine, old.....	91@92	@	@
Upriver, fine, new.....	90@91	95@ 96	93@ 94
Upriver, fine, old.....	95@96	97@ 98	96@ 97
Islands, coarse, new.....	60@61	55@ 56	55@ 56
Islands, coarse, old.....	@	@	@
Upriver, coarse, new.....	73@74	79@ 80	76@ 77
Upriver, coarse, old.....	@	@	@
Caucho (Peruvian) sheet.....	59@60	60@ 61	61@ 62
Caucho (Peruvian) ball.....	69@70	71@ 72	72@ 73

The market for other sorts in New York on which changes have been rather less marked, is as follows:

AFRICAN.		Gaboon lump.....	None here
Sierra Leone, 1st quality.....	84 @85	Niger paste.....	None here
Massai, red.....	84 @85	Accra flake.....	34 @35
Benguella,	68 @69	Accra buttons.....	None here
Cameroon ball.....	62 @63	Accra strips.....	None here
Gaboon flake	None here	Lopori ball, prime.....	82 @83
		Lopori strip, do	75 @76

Ikelemba..... 82 @83
Madagascar, pinky....78 @79

CENTRALS.

Esmeralda, sausage...69 @70
Guayaquil, strip.....58 @59
Nicaragua, scrap... .63 @69

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.	5\$600	Upriver, fine.....	6\$525
Islands, coarse.....	2\$600	Upriver, coarse.....	4\$625

Exchange, 11½¢ d.

Last Manáos advices (December 28):

Upriver, fine.....6\$450/4\$300 Upriver, coarse. 4\$350

Exchange, 11½¢ d.

NEW YORK RUBBER PRICES FOR NOVEMBER (NEW RUBBER).

	1903.	1902.	1901.
Upriver, fine.....	92@1.02	78@82	84@87
Upriver, coarse.....	78@ 83	63@68	63@66
Islands, fine.....	90@ 98	73@76	76@80
Islands, coarse	54@ 58	48@51	46@50
Cameté, coarse.....	53@ 58	48@52	48@51

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.			ENGLAND.		
	Fine and Medium.	Coarse.	Total	Total	Total	Total
Stocks, October 31.....tons	75	7 = 82	170	170	345	345
Arrivals, November.....	782	384 = 1166	1463	1463	1405	1405
Aggregating.....	857	391 = 1248	1633	1633	1750	1750
Deliveries, November.....	825	391 = 1216	1462	1462	1215	1215
Stocks, November 30..	32	0 = 32	171	171	535	535

	PARÁ.			ENGLAND.		
	1903.	1902.	1901.	1903.	1902.	1901.
Stocks, Oct. 31.....tons	345	145	375	435	1250	880
Arrivals, November... 2890	2650	2645	1035	1000	1055	1055
Aggregating.....	3235	2795	3020	1470	2250	1935
Deliveries, November. 3040	2640	2610	1100	1050	1050	1050
Stocks, Nov. 30..	195	155	410	370	1200	885

World's visible supply, November 30.....tons 2648
Pará receipts, July 1 to November 30..... 9290
Pará receipts of Caucho, same dates..... 594
Afloat from Pará to United States, Nov. 30.. 1017
Afloat from Pará to Europe, November 30.. 1034

In regard to the financial situation, Albert B. Beers, (broker in India-rubber, No. 58 William street, New York) advises us as follows:

"During December the money market has ruled firm, with some easing at the end of the month. The demand for paper has been light, with 6@7 per cent. the ruling rate."

Liverpool.

WILLIAM WRIGHT & Co. report [December 1]:

Fine Pará.—Prices have, generally, declined throughout the month. Fluctuations have been of an exceptionally puzzling character, prices dropping as much as 1d. per pound during a day, for no apparent reason; consequently the market has been nervous, buyers not knowing how to act. On the whole, the demand has been good, and with little or no

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound; again no change of importance to be noted:

Old Rubber Boots and Shoes—Domestic.....	6½ @ 7
Do —Foreign.....	6¼ @ 6½
Pneumatic Bicycle Tires.....	4 @ 4½
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	8¾ @ 9
Heavy Black Rubber.....	4¼
Air Brake Hose.....	2½ @ 2¾
Fire and Large Hose.....	2
Garden Hose.....	1½
Matting.....	1

Panama, slab.....52 @53
Mexican, scrap68 @69
Mexican, slab50 @51
Mangabeira, sheet....55 @56
BAST INDIAN.
Assam.....78 @79
Borneo.....@

reserve of stock, either here or in America. The tendency at the close is towards an improvement in prices, which is not to be wondered at, when we take into account small stocks, moderate supplies, a good demand, and a drop of fully 10d. per pound.

London.

EDWARD TILL & Co. [December 1] report stocks:

	1903.	1902.	1901.
LONDON { Pará sorts..... tons	—	—	—
{ Borneo.....	20	93	142
{ Assam and Rangoon.....	4	2	70
{ Other sorts.....	250	230	457

Total..... 274 325 669

	1903.	1902.	1901.
LIVERPOOL { Pará.....	374	1178	890
{ Other sorts.....	537	580	966

Total, United Kingdom.....1185 2083 2525

Total, November 1..... 866 2464 2802

Total, September 1.....1364 2731 2736

Total, August 1.....1781 3053 2944

Total, July 1.....2285 3595 3128

Total, June 1.....2248 3687 3502

PRICES PAID DURING NOVEMBER.

	1903.	1902.	1901.
Pará fine, hard.. . . . 3/10 @4/2	3/4½ @3/ 6	3/ 5¼ @3/7½	
Do soft. 3/ 9 @4/-	3/0¾ @3/ 1½	3/ 3¼ @3/5½	
Negroheads, Islands. . 2/ 3½ @2/5	2/1½ @2/ 2	1/11 @2/1	
Do scrappy..... 3/ 3 @3/4¼	2/8½ @2/10	2/8	
Bolivian 4/- @4/2	3/4¾ @3/ 6	3/6½ @3/7¼	

DECEMBER 11.—Renewed depression has prevailed, and prices of fine Pará have declined fully 2d. since the auctions a fortnight ago, but to-day more steadiness has prevailed, with a slight recovery. Sales of hard cure fine Pará forward down to 3s. 10½¢ d.; soft cure ditto nominal at 3s. 10½¢ d.; Negroheads scrappy, small sales, at 3s. 4d.; Peruvian fine 3s. 10½¢ d.; ball good quality 3s. 4½¢ d.; slab 2s. 7¼¢ d. A fair quantity offered in auction to-day; Africans and Central American steady to rather cheaper. Madagascar mixed niggers and brown biscuit, part dirty, 2s.; Mozambique fair red ball, 3s. 6d.; Lanu ball, 3s. 1d. Molendo: 28 packages sold without reserve for account of underwriters, fine 3s. 10d.; entrefine part coarse, 3s. 5½¢ d.; Negrohead mixed dirty 2s. 11½¢ d.

Ceylon.—Thirty-four packages sold; fine thin biscuits 4s. 6¼¢ d.; ditto dark 4s. 4½¢ d.; mixed to good clean scrap 3s. 2¼¢ d. @ 3s. ½¢ d., dirty dark scrap, 1s. 7d.

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the sale of November 18, of 501 tons exposed 495 tons were sold. Prices were very irregular, and below valuation, as had been anticipated, on account of the decline in Pará sorts. The high grades—in dry condition—were only 5@6 per cent. below valuations, whereas many of the Upper Congo grades—partly very sticky—sold at a decline 10@12 per cent. Between the October and the November sales fine Pará had declined 13 per cent.

The last large sale of the year took place on December 16 when 671 tons out of 675 offered found buyers, showing that there were very urgent wants to be covered. In consideration of the weakness of the Pará market, influenced by heavy receipts at Pará, this sale also showed some weakness, prices averaging about 1½ per cent. below valuations based upon the results of the November sale. The fine Kasai sorts maintained their former value, whereas Upper Congo sorts, of which some were partly sticky, sold at 2@3 per cent. below the November sale. Among the more important lots sold were the following, with the valuations and price obtained:

	Valuation.	Sold at.
70 tons Lopori I	9.30	9.10 @ 9.40
22 " Lopori I.....	9.35	9.07½
33 " Lopori II.....	7.15	7. @ 7.27½
32 " Aruwimi	8.60	8.4¢ @ 8.60
23 " Uelé strips.....	8.25	8.30 @ 8.45
24 " Lake Leopold.....	9.25	9. @ 9.12½

[10 francs per Kilo=87½ cents per Pound.]

Our stocks amount to 310 tons. Our next sale will take place toward the end of January and amount to 670 tons.

C. SCHMID & CO.

Antwerp, December 16, 1903.

[THE buying on American account was very much smaller than usual. The result of the December inscription brings the total sales at Antwerp for 1903 higher than in any preceding year. The receipts at Antwerp during the year have been only slightly smaller than in 1901—the year of the largest receipts in the past—and stocks are unusually small. It would appear that receipts from the Congo are again increasing in size.]

ANTWERP RUBBER STATISTICS FOR OCTOBER.

DETAILS.	1903.	1902.	1901.	1900.	1899.
Stocks, Sept. 30. <i>kilos</i>	421,858	456,711	896,143	1,004,762	307,482
Arrivals, October...	944,274	340,598	234,635	470,028	304,946
Congo sorts.....	863,240	306,228	191,178	431,917	166,821
Other sorts.....	81,034	34,370	43,457	38,111	138,125
Aggregating...	1,366,132	797,309	1,130,778	1,474,790	612,428
Sales, October....	489,495	447,171	864,673	565,743	463,690
Stocks, Oct. 31...	876,627	350,138	266,105	909,047	148,738
Arrivals since Jan. 1	4,726,430	4,369,518	4,960,761	5,054,496	2,933,333
Congo sorts	4,277,093	4,031,632	4,571,034	4,298,062	2,491,590
Other sorts	449,427	337,886	386,727	756,434	441,743
Sales since Jan. 1...	4,507,898	4,434,089	5,308,605	4,437,440	3,047,935

ANTWERP RUBBER STATISTICS FOR NOVEMBER.

DETAILS.	1903.	1902.	1901.	1900.	1899.
Stocks, Oct. 31. <i>kilos</i>	876,637	350,138	266,105	909,047	148,738
Arrivals, November.	361,805	235,231	683,521	473,404	150,196
Congo sorts	303,453	201,172	660,897	452,215	120,127
Other sorts	58,442	34,059	22,624	21,189	30,069
Aggregating....	1,238,532	585,309	949,626	1,382,451	298,934
Sales in November..	558,390	399,408	106,325	317,805	119,156
Stocks, Nov. 30..	680,142	185,961	843,301	1,064,646	179,778
Arrivals since Jan 1.	5,088,325	4,604,749	5,644,282	5,527,900	3,083,529
Congo sorts	4,580,456	4,232,304	5,234,931	4,750,277	2,611,717
Other sorts	507,869	371,945	409,351	777,623	471,812
Sales since Jan. 1...	5,066,288	4,833,497	5,414,930	4,755,245	3,167,091

RUBBER ARRIVALS AT ANTWERP.

DECEMBER 9.—By the *Philippeville*, from the Congo:

Comptoir Commercial Congolais.....	<i>kilos</i>	54,000
Bunge & Co..... (Chemins de fer des Grand Lacs)		11,000
Do	(Société Isangi)	3,500
Do	(Société Anversoise)	22,500
Do	(Société Générale Africaine)	70,600
Société Coloniale Anversoise. (Belge du Haut Congo)		1,800
Do	(Cie. du Kasai)	102,000
Do	(Cie. du Kasai)	9,600
Do	(Sud Kamerun)	6,700
Do	(Cie. de Lomami)	10,000
Do		1,000
M. S. Cols.....	(Baniembe)	800
Do	(Alima)	2,000
Charles Dethier.....	(La M'Poko)	3,000
Comptoir des Produits Coloniaux.....		1,500
W. Mallinckrodt & Co. (Caoutchoucs et Produits de	La Lobay)	2,800 282,800

Ceylon Rubber Exports.

OFFICIAL statement of shipments of cultivated rubber, from January 1 to November 30, 1903:

To Great Britain	<i>pounds</i>	36,687
To Belgium		156
To Germany.....		1,672
To United States.....		400
Total.....		38,915
Total, 12 months, 1902.....		21,168
Total, 12 months, 1901.....		7,392

Rubber Receipts at Manaus.

DURING November and the first five months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	NOVEMBER.			JULY-NOVEMBER.		
	1903.	1902.	1901.	1903.	1902.	1901*
Rio Purús..... <i>tons</i>	512	249	497	1613	1448	1871
Rio Madeira.....	199	240	257	1208	1134	1231
Rio Juruá.....	468	183	604	882	452	1185
Rio Javary—Iquitos...	304	246	120	1070	554	595
Rio Solimões.....	123	153	268	306	598	772
Rio Negro.....	32	21	12	49	90	29
Total.....	1638	1092	1768	5128	4276	5783
Caucho.....	44	94	302	472	415	816
Total.....	1682	1186	2070	5600	4691	6599

Bordeaux.

R. HENRY favors THE INDIA RUBBER WORLD with details of arrivals of rubber for 1903 which permit the record to be brought down to December 1, as follows [weights in kilograms]:

Soudan twists.....	740,000	Madagascar.....	2,560
Soudan niggers.....		Java.....	1,500
Conakry niggers.....		Mexican.....	2,010
Cassamance or Gambia	54,140	Other sorts.....	600
Bassam (Gold Coast)...	34,370		
Lahou.....	21,916	Total	912,096
Congo sorts.....	55,000		

Total arrivals for the twelve months of 1902 were 678,400 kilos and in the preceding year only 235,380 kilos.

PRICES DECEMBER 7, IN FRANCS PER KILO.

Conakry niggers, red..	7.50@9.75	Mayumbe.....	5.80@6.10
Soudan niggers, white.	8.50@8.85	Lahou twists.....	8.40@8.65
Soudan twists.....	8.25@8.65	Bassam niggers.....	7.85@8.95
Cassamance A.....	7.10@7.35	Madagascar:	
Cassamance A. M....	6.45@6.60	Majunga.....	6. @8.
Bassam lumps.....	4.95@5.55	Tamatave.....	8.50@9.
Bassam cakes.....	6.90@7.40	Niggers	4. @5 25

Gutta-Percha.

WEISS & Co. (Rotterdam) report exports from Singapore for the first ten months of five years past as follows:

	1899.	1900.	1901.	1902.	1903.
Tons.....	5988	5314	4810	3576	2834

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

December 4.—By the steamer *Amazonense*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
A. T. Morse & Co.....	302,200	67,500	103,800	1,000=	474,500
New York Commercial Co.	133,100	33,900	105,900	.....=	272,900
United States Rubber Co.	174,400	27,400	51,700	1,200=	254,700
Poel & Arnold.....	53,200	21,000	38,400	2,200=	114,800
William Wright & Co....	22,200	700	21,500	.....=	44,400
Lionel Hagenaers & Co..	9,700	.....	1,000	.....=	10,700
Robinson & Tallman....	6,700	1,400	1,000	.....=	9,100
Hagemeyer & Brunn....	5,700	2,400	900	.....=	9,000
Herbst Brothers.....	3,200	1,100	1,600	.....=	6,200
Thomsen & Co.....	3,800	.....	300	.....=	4,100
Total.....	714,200	155,400	326,400	4,400=	1,200,400

December 14.—By the steamer *Hilary*, from Manáos and Pará:

Poel & Arnold.....	145,300	30,000	82,700	6,000=	264,000
United States Rubber Co.	146,200	30,300	80,200	.....=	256,700
A. T. Morse & Co.....	119,700	17,900	112,500	1,400=	251,500
New York Commercial Co.	43,300	16,200	28,600	1,900=	90,000
William Wright & Co....	300	.....	28,200	.....=	28,500
Lionel Hagenaers & Co..	8,800	.....	800	.....=	9,600
Thomsen & Co.....	7,800	200	1,100	.....=	9,100
Hagemeyer & Brunn....	5,700	2,400	900	.....=	9,000
Robinson & Tallman....	5,600	1,400	1,200	.....=	8,200

Total

December 24.—By the steamer *Fluminense*, from Manáos and Pará:

A. T. Morse & Co.....	287,800	66,000	95,300	1,500=	450,600
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New York Commercial Co.	175,000	39,800	129,300	300=	344,400
Poel & Arnold	164,000	51,600	92,700	100=	308,400
United States Rubber Co.	16,000	3,000	43,800	.....	62,800
William Wright & Co.	.....	.....	22,700	.....	22,700
Thomsen & Co.	15,400	600	2,200	.....	18,200
Lionel Hagenaaers & Co.	9,300	.....	1,100	.....	10,400

Total... 667,500 161,000 387,100 1,900=1,217,500
 [NOTE.—The steamer *Benedict*, due at New York on January 2, has on board 425 tons of Rubber and 25 tons of Caucho.]

PARA RUBBER VIA EUROPE.

DEC. 22.—By the *Zeeland*=Antwerp:
 A. T. Morse & Co. (Fine)..... 28,000

OTHER ARRIVALS AT NEW YORK CENTRALS.

NOV. 23.—By the *Proteus*=New Orleans:
 Manhattan R. Mfg. Co. 8,500
 A. T. Morse & Co. 6,000
 A. N. Rotholz 3,000
 Eggers & Heinlein 1,500 17,000

NOV. 24.—By the *Seguranca*=Colon:
 Hirzel, Feltman & Co. 39,000
 Lawrence Johnson & Co. 9,300
 G. Amsinck & Co. 5,000
 American Trading Co. 4,600
 A. Santos & Co. 4,400
 Mecke & Co. 2,800
 Roldan & Van Sickle 2,600
 Isaac Brandon & Bros. 4,400
 L. N. Chemedin & Co. 2,000
 Smithers, Nordenholt & Co. 1,500
 E. B. Strout 1,200
 Dumarest & Co. 1,400
 A. D. Straus & Co. 600 78,800

NOV. 27.—By the *Adirondack*=Savannah, etc.:
 G. Amsinck & Co. 1,100
 Roldan & Van Sickle 500
 D. A. De Lima & Co. 300
 Mecke & Co. 800 2,500

NOV. 27.—By *El Valle*=New Orleans:
 A. T. Morse & Co. 1,500
 For Europe 4,500 6,000

NOV. 30.—By the *Vigilancia*=Mexico:
 E. Steiger & Co. 1,200
 Thebaud Brothers 700
 Harburger & Stack 800
 E. N. Tibbals & Co. 800
 H. Marquardt & Co. 300
 For Hamburg 5,900 3,500

NOV. 30.—By the *Sailor Prince*=Bahia:
 Hirsch & Kaiser 7,800

DEC. 1.—By the *Alhance*=Colon:
 G. Amsinck & Co. 19,000
 Hirzel, Feltman & Co. 10,500
 Meyer Hecht 4,300
 E. B. Strout 2,200
 L. N. Chemedin & Co. 2,300
 Livingstone & Co. 1,700
 Piza Nephews & Co. 1,700
 Smithers, Nordenholt & Co. 1,000
 Eggers & Heinlein 800
 Charles E. Griffin 700
 Lawrence Johnson & Co. 700
 H. Marquardt & Co. 500
 For Antwerp 5,800 51,200

DEC. 1.—By the *Valencia*=Cartagena:
 Isaac Brandon & Bros. 4,500
 Isaac Kuble & Co. 1,500
 E. B. Strout 1,000
 Lawrence Johnson & Co. 500
 Silva, Bussenius & Co. 500 8,000

DEC. 4.—By the *Tintoretto*=Bahia:
 J. H. Rossbach & Bros. 11,000
 Hirsch & Kaiser 12,000 23,000

DEC. 5.—By *El Rio*=New Orleans:
 A. T. Morse & Co. 7,500
 Manhattan Rubber Mfg. Co. 2,500 10,000

DEC. 8.—By the *Yucatan*=Colon:
 Hirzel, Feltman & Co. 26,500
 G. Amsinck & Co. 15,400
 American Trading Co. 8,500
 A. Santos & Co. 6,200
 Mecke & Co. 4,500
 A. M. Capen Sons 5,000
 Roldan & Van Sickle 3,700
 W. Lualza & Co. 3,000
 Dumarest & Co. 2,800
 L. Johnson & Co. 700
 Smithers, Nordenholt & Co. 600
 Isaac Kuble & Co. 500
 Frederick Probst & Co. 500
 Harburger & Stack 300
 Lanman & Kemp 700

FROM OTHER SOUTH AMERICAN PORTS.

November 24.—By the steamer *Seguranca*, from Mollendo:
 Chicago Bolivian Rubber Co. 7,000 7,000

November 24.—By the steamer *Philadelphia*, from La Guayra:
 Thebaud Brothers 2,000 2,000

December 22.—By the steamer *Seguranca*, from Mollendo:
 Chicago Bolivian Rubber Co. 3,500 3,500

CENTRALS—Continued.

J. H. Recknagel & Co. 500
 Kunhardt & Co. 300
 Antwerp, etc. 2,000 81,700

DEC. 9.—By the *Carib II*=Honduras:
 Eggers & Heinlein 8,500
 H. W. Peabody & Co. 900
 A. S. Lascellas & Co. 600 10,000

DEC. 10.—By the *Waldersce*=Hamburg:
 Eggers & Heinlein 6,700

DEC. 12.—By the *El Siglo*=New Orleans:
 Manhattan Rubber Mfg. Co. 12,500
 A. N. Rotholz 3,000
 Eggers & Heinlein 3,000
 A. S. Lascellas & Co. 500
 T. N. Morgan 500 19,500

DEC. 14.—By the *Horace*=Bahia:
 J. H. Rossbach & Bros. 13,500
 Hirsch & Kaiser 15,000 28,500

DEC. 15.—By the *City of Washington*=Colon:
 Meyer Hecht 3,900
 Hirzel, Feltman & Co. 2,000
 Isaac Brandon & Bros. 1,300
 Samuels & Cummings 1,200
 Frederik Probst & Co. 1,000
 Harburger & Stack 1,000
 Piza, Nephews & Co. 700
 E. Steiger & Co. 200
 For Brussels, etc. 8,000 19,300

DEC. 15.—By the *Umbria*=Liverpool:
 George A. Alden & Co. 13,000
 Poel & Arnold 3,700 16,700

DEC. 15.—By *Alleghany*=Greystown, etc.:
 Isaac Brandon & Bros. 2,000
 Isaac Kuble & Co. 1,000
 D. A. De Lima & Co. 1,000
 A. D. Straus & Co. 1,000
 E. B. Strout 2,600
 Andreas & Co. 2,000
 Livingstone & Co. 500
 Silva Bussenius Co. 500
 A. S. Lascellas 300 9,300

DEC. 21.—By the *Proteus*=New Orleans:
 A. T. Morse & Co. 2,500
 Manhattan Rubber Mfg. Co. 1,000 3,500

DEC. 22.—By the *Seguranca*=Colon:
 Hirzel, Feltman & Co. 32,500
 G. Amsinck & Co. 10,500
 Lawrence Johnson & Co. 5,800
 Meyer Hecht 4,100
 A. Santos & Co. 3,600
 E. B. Strout 3,800
 Livingstone & Co. 3,500
 Dumarest & Co. 2,300
 Isaac Brandon & Bros. 1,800
 Lanman & Kemp 1,900
 Roldan & Van Sickle 1,400
 Jimenez & Escobar 1,300
 L. N. Chemedin & Co. 2,000
 R. G. Barthold 1,200
 Smithers, Nordenholt & Co. 1,000
 Graham, Hinkley & Co. 1,000
 E. N. Tibbals & Co. 700
 Isaac Kuble & Co. 900
 Everett Heaney & Co. 700
 Kunhardt & Co. 200
 Eggers & Heinlein 300 80,500

AFRICANS.

NOV. 23.—By the *Zeeland*=Antwerp:
 A. T. Morse & Co. 25,000
 Joseph Cantor 3,000 28,000

NOV. 27.—By the *Pretoria*=Hamburg:
 Robinson & Tallman 13,500
 Joseph Cantor 12,000
 A. T. Morse & Co. 5,000
 Poel & Arnold 3,500 34,000

NOV. 28.—By the *Philadelphia*=London:
 United States Rubber Co. 43,000

NOV. 30.—By the *Etruria*=Liverpool:
 Poel & Arnold 33,000
 A. T. Morse & Co. 11,000
 Earle Brothers 11,000
 William Wright & Co. 8,000
 Rubber Trading Co. 3,000 68,000

AFRICANS—Continued.

DEC. 1.—By the *Finland*=Antwerp:
 A. T. Morse & Co. 110,000
 Poel & Arnold 67,000 177,000

DEC. 4.—By the *Molla*=Hamburg:
 A. T. Morse & Co. 22,000
 Joseph Cantor 7,500 29,500

DEC. 5.—By the *St. Louis*=London:
 Henry A. Gould Co. 8,000
 Poel & Arnold 6,500 14,500

DEC. 5.—By the *Campania*=Liverpool:
 United States Rubber Co. 22,500
 George A. Alden & Co. 11,500
 Rubber Trading Co. 4,000 38,000

DEC. 7.—By the *Vaderland*=Antwerp:
 George A. Alden & Co. 187,000
 Joseph Cantor 26,000
 William Wright & Co. 7,000
 For Boston, etc. 180,000 400,000

DEC. 9.—By the *Dona Maria*=Lisbon:
 United States Rubber Co. 100,000

DEC. 10.—By the *Oceanic*=Liverpool:
 George A. Alden & Co. 15,000
 A. T. Morse & Co. 4,000
 William Wright & Co. 3,000 22,000

DEC. 10.—By the *Graf Waldersce*=Hamburg:
 A. T. Morse & Co. 24,000
 Poel & Arnold 4,500 28,500

DEC. 17.—By the *Teutonic*=Liverpool:
 A. T. Morse & Co. 13,000
 Poel & Arnold 16,000
 Rubber Trading Co. 11,000 40,000

DEC. 19.—By the *Lucania*=Liverpool:
 A. T. Morse & Co. 27,000
 Earle Brothers 11,000
 George A. Alden & Co. 8,000
 Rubber Trading Co. 4,500 60,500

DEC. 22.—By the *Zeeland*=Antwerp:
 George A. Alden & Co. 48,000
 Joseph Cantor 22,000 70,000

DEC. 23.—By the *Belgravia*=Hamburg:
 Robinson & Tallman 7,500
 Joseph Cantor 6,500
 A. T. Morse & Co. 47,500
 Rubber Trading Co. 13,500 75,000

EAST INDIAN.

NOV. 30.—By the *Mesiba*=London:
 Robinson & Tallman 12,000

DEC. 21.—By the *St. Paul*=London:
 Poel & Arnold 11,000

DEC. 22.—By the *Shimosa*=Singapore:
 William Wright & Co. 45,000
 Poel & Arnold 23,000
 Rubber Trading Co. 15,000
 Robert Branss & Co. 10,000
 E. Oppenheim 20,000 113,000

PONTIANAK.

DEC. 22.—By the *Shimosa*=Singapore:
 William Wright & Co. 50,000
 Robinson & Tallman 110,000
 Robert Branss & Co. 60,000 730,000

GUTTA-PERCHA AND BALATA.

DEC. 5.—By the *St. Louis*=London:
 Earle Brothers 1,000

BALATA.

NOV. 23.—By the *Maraval*=Trinidad:
 Eggers & Heinlein 900
 Middleton & Co. 800
 Frame & Co. 300
 De Sofa Labo & Co. 1,100 3,100

DEC. 2.—By the *Maracaibo*=La Guayra:
 John Boyd, Jr. & Co. 2,500

DEC. 5.—By the *St. Louis*=London:
 Poel & Arnold 8,000
 Earle Brothers 2,200 10,200

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—NOVEMBER.

Imports:	POUNDS.	VALUE.
India-rubber	4,299,695	\$2,955,592
Gutta-percha	22,296	9,152
Gutta-jelutong (Pontianak) ..	2,311,312	64,232
Total	6,633,302	\$3,028,976
Exports:	POUNDS.	VALUE.
India-rubber	134,414	\$103,641
Reclaimed rubber	36,202	8,728
Rubber Scrap Imported	1,122,497	67,478

BOSTON ARRIVALS.

	POUNDS.
Nov. 10.—By the <i>Sachem</i> —Liverpool:	
George A. Alden & Co.—Fine Para ..	3,849
Nov. 18.—By the <i>Canadian</i> —Liverpool:	
Poel & Arnold.—African	2,260
Nov. 24.—By the <i>Cestrian</i> —Liverpool:	
George A. Alden & Co.—African	2,049
Nov. 30.—By the <i>Kansas</i> —Liverpool:	
Poel & Arnold.—African	9,105

BOSTON ARRIVALS—Continued.

	POUNDS.
Nov. 30.—By the <i>Kansas</i> —Liverpool:	
George A. Alden & Co.—Centrals....	12,502
Total	29,765
[Value, \$15,672.]	
GUTTA-PERCHA.	
Nov. 20.—By the <i>Cambrian</i> —London:	
Robinson & Tallman	2,404

NOVEMBER EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Adelbert H. Alden	65,108	19,405	102,396	788	187,697	161,420	7,840	41,107	4,445	214,812	402,509
Frank da Costa & Co.	98,189	7,572	156,551	—	262,312	80,278	3,738	28,756	—	112,772	375,084
Cmok, Schrader & Co.	32,640	2,720	64,160	—	99,520	200,260	13,940	39,220	15,862	269,282	368,802
Neale & Staats	8,568	1,008	79,632	—	89,208	54,432	3,024	—	—	57,456	146,664
Kanthack & Co.	9,005	846	2,614	—	12,465	16,646	2,570	3,632	117	22,965	35,430
Singlehurst Brocklehurst & Co.	—	—	—	—	—	22,159	2,543	9,429	62	34,193	34,193
J. Marques & Co.	7,818	361	1,399	—	9,578	17,492	1,059	5,832	—	24,383	33,961
R. Suarez & Co.	—	—	—	—	—	20,013	4,822	3,477	1,350	29,662	29,662
Denis Crouan & Co.	10,710	340	16,640	—	27,690	—	—	—	—	—	27,690
Pires, Teixeira & Co.	14,616	—	1,605	—	16,221	—	—	—	—	—	16,221
Sundry small shippers.	—	—	—	—	—	1,725	140	4,902	—	6,767	6,767
Direct from Itacoatiara	—	—	—	—	—	1,562	—	447	—	2,009	2,009
Direct from Manáos	615,824	138,524	115,413	10,422	880,213	321,220	61,384	61,501	28,939	473,044	1,353,257
Direct from Caballo Cocha ..	—	—	—	—	—	54,020	2,555	14,129	1,677	72,381	72,381
Direct from Iquitos	—	—	—	—	—	132,163	5,867	44,436	55,689	238,155	238,155
Total for November	862,478	170,776	540,440	11,210	1,584,904	1,083,390	109,482	256,863	108,141	1,557,881	3,142,785
Total for January-October ..	5,515,792	1,295,323	3,998,476	1,090,265	11,899,856	7,005,052	926,106	2,064,545	2,711,756	12,707,459	24,607,315
TOTAL SINCE JANUARY 1	6,378,270	1,466,099	4,538,916	1,101,475	13,484,760	8,088,442	1,035,588	2,321,413	2,819,897	14,265,340	27,750,100

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1903	3,597,057	375,026	3,222,031	October, 1903	5,676,832	3,436,832	2,240,000
January-September	42,848,398	4,583,197	40,315,201	January-September	39,249,168	28,900,592	10,348,576
Ten months, 1903	46,495,455	2,958,223	43,537,232	Ten months, 1903	44,926,000	32,337,424	12,588,576
Ten months, 1902	41,290,317	2,816,659	38,473,658	Ten months, 1902	38,779,776	26,096,336	12,683,440
Ten months, 1901	45,120,538	3,250,775	41,869,763	Ten months, 1901	42,992,768	27,125,280	15,867,468
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1903	2,668,380	878,460	1,789,920	October, 1903	168,300	3,300	165,000
January-September	25,848,020	8,873,040	16,974,980	January-September	1,117,820	123,420	994,400
Ten months, 1903	28,516,400	9,751,500	18,764,900	Ten months, 1903	1,286,120	126,720	1,159,400
Ten months, 1902	27,540,920	11,475,640	16,065,280	Ten months, 1902	1,162,700	107,360	1,055,340
Ten months, 1901	23,818,300	8,902,520	14,915,780	Ten months, 1901	1,250,920	189,640	1,061,280
FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
October, 1903	1,441,660	792,440	649,220	October, 1903	263,340	2,200	261,140
January-September	11,754,160	6,826,600	4,927,560	January-September	2,137,080	20,460	2,116,620
Ten months, 1903	13,195,820	7,619,040	5,576,780	Ten months, 1903	2,400,420	22,660	2,377,760
Ten months, 1902	13,277,000	8,326,340	4,950,660	Ten months, 1902	2,179,320	12,320	2,167,000
Ten months, 1901	13,593,300	8,601,120	4,992,180	Ten months, 1901	2,207,480	25,080	2,182,400
BELGIUM.†							
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.				
October, 1903	2,544,414	1,268,320	1,276,094				
January-September	11,405,095	9,326,698	2,078,397				
Ten months, 1903	13,949,509	10,595,018	3,354,491				
Ten months, 1902	12,690,044	10,062,939	2,628,005				
Ten months, 1901	12,727,880	10,977,762	1,750,118				

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

* General Commerce.

† Special Commerce.

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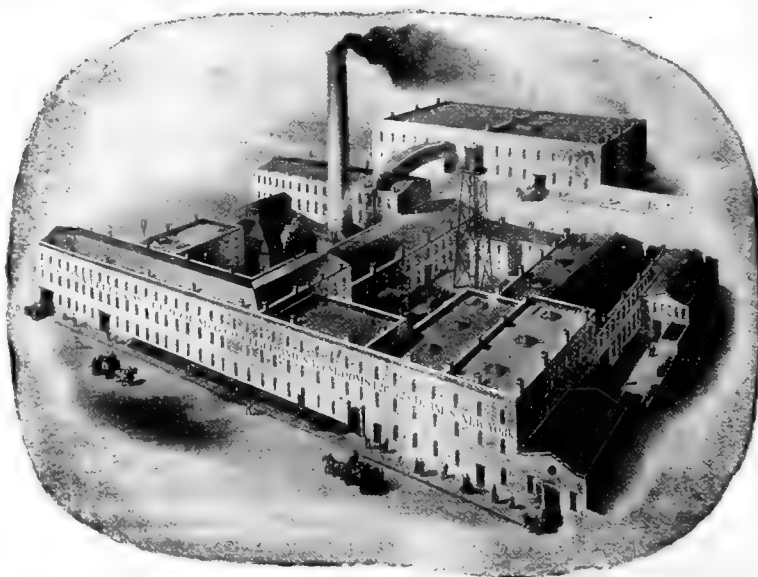
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FEBRUARY 1, 1904.

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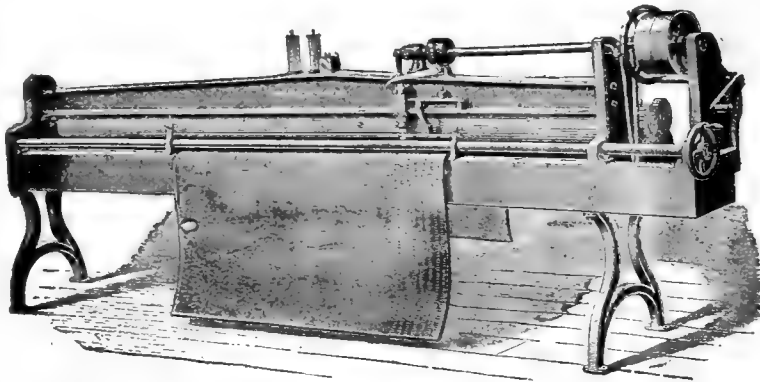
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ASSOCIATE.

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LESSON OF THE RUBBER STATISTICS.

WE feel that the space devoted in this issue to statistics of the crude rubber situation is well employed, for the reason that the figures are all recent, all carefully prepared, and all authentic, and that they have a meaning. They have come from many independent sources, and have not been prepared for the purpose of advancing any particular interest, or proving or disproving any theory.

They show, in the first place, that the rate of production of crude rubber is larger than at any previous period. More rubber reached the consuming markets in 1903 than ever before within twelve months. And yet the standard of prices was materially higher at the end of the year than at the beginning, and the visible supplies of rubber were exceptionally small.

There is nothing in the recent large production of rubber inconsistent with the idea that, on the whole, the natural resources are decreasing. Ever since India-rubber first came to have a commercial value the world has been growing smaller, in a sense, and its most remote recesses becoming more accessible through the extension of transportation facilities.

Charles Goodyear never heard of Manáos, and nobody in his day thought of the existence of rubber in the district of which the present city of that name is the commercial and political capital. Yet there was shipped from Manáos last year more than 40,000,000 pounds of "Pará rubber," most of it on ocean going steamers direct to New York and European ports. There has been like development, but more recent, in the African rubber trade.

There is more rubber coming out of those countries because it can be reached at less cost and in less time than formerly; there was a time when transportation rates from the upper Amazon were prohibitive. But so far as a great part of the rubber regions is concerned, the faster the product is gathered, the sooner will be the period of exhaustion. British India formerly shipped millions of pounds of rubber annually, and now only a few hundred thousands. This country once obtained more rubber from Colombia than from Pará, whereas now the Colombian output is but a drop in the bucket.

Still, there is a great deal of rubber in sight. The concern of the manufacturer at this time is not exhaustion, but the fact that, with all the advantages of commercial extension, instead of rubber becoming more plentiful and cheaper, prices go up and stores of rubber become smaller. The one consolation is the indication which these conditions afford of a steady and general demand for rubber goods, lending hope of the permanence of the industry.

A rise in price does not lessen the demand; there are not only more rubber goods bought to-day, but better goods than could be made when 60 cents a pound was a price for "Pará fine." One reason is that more people are becoming able to buy rubber goods in the countries where such goods have longest been known, and their use is being extended into new countries all the while. The outlook is hopeful so long as the world wants rubber goods; if the price of raw materials goes up it may interfere tem-

porarily with profits, but the demand for a necessity—such as rubber has become—is superior to questions of price.

And we may add that all the conditions here alluded to afford encouragement particularly to the planters and prospective planters of rubber, who will not fail to see a shortening of native supplies by the time the cultivated product can be marketed in large quantities.

REAL TEST OF THE AUTOMOBILE.

THE most informing single bit of printed matter that has come to our notice, bearing upon the development of the automobile vehicle interest in this or any other country, is a certain recent illustrated trade catalogue, the major part of which consists of photographic views of commercial vehicles, employed by leading firms in some of the larger American cities. It is not of particular concern to THE INDIA RUBBER WORLD what company is benefited by the distribution of this book. It is of interest to us for the reason that, without regard to this or that type of horseless vehicle, it gives views of vehicles in practical use—employed for reasons of economy alone, throughout the United States—under conditions which point to the future extensive employment, as a means of transportation on city streets, of vehicles without any necessity for horse power.

Questions of steam, gasoline, or electricity must be left for settlement by experts in their different fields. The point now is that the practicability of the transportation of goods in other than horse drawn vehicles has been demonstrated, and the horse must disappear, just as he disappeared on the stage coach lines on the advent of the locomotive; just as he disappeared on city streets to make place for the electric street car.

In the face of greater possible speed, greater economy, less space on the streets of cities, and increased cleanliness of the streets, the horse no longer has any standing except in the hands of horse lovers—and in another generation the number of these may be less than now. Not only in cities is this true, but in all closely populated suburban and rural communities.

This is the lesson of the latest automobile shows in America. It is the lesson of the automobile shows in Europe—whence must be transmitted to this side of the Atlantic whatever there is of merit in the mechanisms which have excited so much of interest there. It is not boastfulness to assert that whatever has been accomplished by mechanical skill in any other country can be duplicated in America; indeed the historical record shows that on this side of the Atlantic there are mechanics ready to contribute to the development of any new practical idea that promises economic returns on a scale of marked importance.

The gigantic racing machine is very well; its spectacular attractions compel the attention and admiration of the masses. The machines principally on show were very well for the pleasure carriages of the rich, who are not in the majority in any community that ever has or ever will

exist. But the great test of the automobile is in the business contest in which the profits or the wages of the greatest possible number of citizens is involved, and this is in the carriage of merchandise over small distances, as in city streets.

Hence the appearance in a single trade catalogue—it doesn't matter whose—of views of half a hundred commercial wagons, owned and operated by the most conspicuous commercial firms in half a dozen of the largest American cities, and vehicles which have not been set up for purely advertising purposes, but because of economical advantages, gives this publication great practical value as demonstrating the advantage of the horseless vehicle.

And the importance to the whole to the rubber trade is that this new development in the transportation world has been possible only through the employment of rubber tires, and this development is measured precisely by the evolution of practical elements in tire construction.

THE NEW RUBBER FOOTWEAR PRICES.

THE leading rubber shoe manufacturers have announced their list and net prices to take effect on February 1. There is practically no change in list prices. At the office of the United States Rubber Co. it was stated that about the only change in their lists refers to goods packed in cartons, on which there is an advance of one cent per pair, on account of the price of the carton. All prices and discounts are subject to change without notice. A new scale of discounts has been adopted, which materially advance the cost of goods. Until May 31, 1904, the following discounts to retailers, from the lists of the United States Rubber Co., will be in effect:

First quality (except Woonsocket and Meyer).....	30@5@3%
Woonsocket and Meyer brands.....	30@10@5@3%
Second quality (except Rhode Island).....	30@5@5@3%
Rhode Island brand.....	30@10@5@5@3%
Colonial brand.....	45@5@5%

From June to November 30, 1904, or until further notice one 5 per cent. discount will be withdrawn from the list, thus continuing the policy of allowing a special discount to encourage early buying. The company's contract with jobbers has been drawn on lines similar to the one under which the company have been doing business for the past season; that is, it embodies no restriction on the prices to be charged by jobbers to retailers. As will be seen from another column, however, the shoe jobbers have again resolved on their own account to maintain prices. The following paragraph, from the company's "memorandum of agreement" covers the matter of guarantee:

IV. GUARANTEE.—In case the company shall, prior to December 1, 1904, reduce the selling price to the said purchaser of the particular brand herein contracted for below the price herein named, a corresponding reduction shall be made to said purchaser on all goods of said brand shipped or delivered to him under this contract prior to that date. The account of this brand to be taken on all the styles of this brand included in the said contract, making due allowance for all styles increased in price. This guarantee shall not be affected by the sale of out-of-style, damaged, or imperfect goods. This company may sell damaged or out-of-style goods at reduced prices, and the company's decision as to what goods are damaged or out-of-style shall be final and conclusive.

Payments for goods actually delivered to customers up to March 31 will be due on May 15; deliveries prior to November 1 to be paid for on December 15, and deliveries thereafter to be paid for on the 15th of the second month following date of invoice.

MR. PEARSON IN CEYLON.

THE Ceylon newspapers report the arrival at Colombo on December 7, of Mr. Henry C. Pearson, the editor of THE INDIA RUBBER WORLD. The Ceylon *Observer*, after an interview with Mr. Pearson, writes:

"His views of the future of the rubber industry are of interest. Mr. Pearson thinks that the danger of rubber being over-produced is infinitesimal; though there is little doubt that the high prices so long prevailing have done much to encourage planting extensions. Rubber is different, he argues, from such a product as tea—for the uses of rubber are extending year by year, and a limit of them is far from being fixed. The demand therefore, is likely to keep pace with the supply for some time to come. On the other hand, rubber is bound to become cheaper as time goes on, and rubber manufacturers are only waiting this time to be able to do more business in rubber than they can with the high prices still ruling. Mr. Pearson holds that the British planter is doing a great service to the rubber trade all over the world by his enterprise in rubber planting."

The *Times of Ceylon*, in the course of a lengthy interview with Mr. Pearson, quotes him as saying:

"An interesting point to all planters, and to all your readers, is as to whether, if everybody puts in *Hevea* here, they are going to give the world too much rubber. Now my belief is that, if they actually tried to do that, and put all the money of Great Britain into the enterprise, they could not do it. Why? Simply because the uses to which rubber is put are naturally multiplying themselves above the yearly output of crude rubber, and, with an increase, nobody knows how much more the uses will multiply. For instance, there is rubber tiling. There is nothing in the wide world that equals rubber tiling. It will outwear stone or glass. It is perfectly sanitary, and is one of the pleasantest things to walk upon. If rubber were more abundant, tons more would be used for this purpose yearly. In my judgment, there is no earthly reason why you should not go on planting just as much as you possibly can, and gathering as much as you can. - - -

"Mr. Pearson once more made light of the idea that too much rubber may be grown. 'Of course,' he remarked, 'prices will go up and prices will go down, but in my lifetime or yours there will probably never be a time when Pará rubber is not worth 75 to 80 American cents (3s. 4d.); that is fine, dry Pará rubber.'

"How is it that Ceylon rubber gets a better price than other rubber?"

"South American Pará rubber has from 12 to 18 per cent. of moisture in it and yours has only from ½ to 1 per cent. That comes through allowing the water to remain and sending it in that way, when the American rubber apparently has a greater weight than Ceylon Pará. Rubber importers in England and America were accused of storing the rubber in wet cellars for that purpose. A pound of your rubber means more real rubber than a pound of South American rubber because the latter is part water."

Details were given of Mr. Pearson's plans for visiting typical rubber estates in Ceylon and the Malay states and afterwards for a trip to Manila and Yokohama, and return to the United States across the Pacific. Dispatches received from Mr. Pearson indicate that his program is being carried out generally as indicated.

It has not been mentioned before in these columns, but Mr. Pearson has been making a trip around the world to study the progress of rubber planting, with a view to recording his observations for the benefit of THE INDIA RUBBER WORLD'S readers.

NEW TRADE PUBLICATIONS.

THE FIRESTONE TIRE AND RUBBER CO. (Akron, Ohio) have issued the most elaborate tire catalogue of the season. A large amount of its space is devoted to illustrations, beginning with a view of their plant, which is stated to be the largest in the world devoted exclusively to the manufacture of solid rubber tires, followed by views of their selling agencies in various cities. Next come views of heavy commercial vehicles of various types, employed by nearly fifty firms in various parts of the country, including wagons well known to all who are familiar with the streets of New York and Chicago, all using Firestone side-wire tires. There are also views of several large pieces of fire apparatus in several cities, equipped with the Firestone tire. Several pages are then devoted to testimonial letters from business firms, fire department officials, etc., reproduced in *fac simile*. The remaining pages are filled with descriptions of the distinctive features of this tire, with suitable illustrations. [12"×9½". 40 pages.]

INDIA RUBBER CO. (New Brunswick, New Jersey) issue a catalogue of the various types of tires which they are manufacturing, and which includes practically all the styles of rubber vehicle tires now marketed. Reference is also made to single tube bicycle tires and bicycle sundries. [5½"×8½". 16 pages.]

MERCHANTS RUBBER CO.—William Morse, president (New York) issue an illustrated catalogue of Rubber and Rainproof Clothing, which they carry in connection with rubber boots and shoes, dated January, 1904. It embraces a full line, and is definite in the matter of descriptions, besides giving prices. [5"×6¾". 29 pages.]

THE B. F. GOODRICH CO. (Akron, Ohio) issue a booklet entitled "Six Thousand Miles of Triumph for Goodrich Clincher Automobile Tires," referring to the tour recently made by Dr. H. Nelson Jackson from San Francisco to New York, over a zigzag route and on roads often of the most trying character. The two tires on the front wheels came across the continent without change. Six Goodrich tires in all were used on the two rear wheels. A number of half tone views of scenes along the route are given. [5¾"×6¾". 16 pages.]

A VERY extensive and complete catalogue of rubber toys (*Gummi Figuren*) is that of the HANNOVERSCHE GUMMI-KAMM CAMPAGNIE, ACTIENGESSELLSCHAFT (Hanover Rubber Co., Limited), received through their American agents, George Borgfeldt & Co., of New York. Here are shown in great variety, dolls and figures of animals and birds—in greater variety, in fact, than are made elsewhere than in Germany—and also imitations of fruits and other objects, all colored in the representation of nature. [10½"×13½". 21 double page plates.]

THE DIAMOND RUBBER CO. (Akron, Ohio) have got out a booklet with the title "The Greatest Thing in Motordom," devoted to recent records in automobiling in which "Diamond" tires figured. It forms an interesting historical record. Besides the automobile views, the illustrations include views of the company's factory and nine of their branch stores, in as many cities. [4½"×5½". 32 pages.]

BOWERS RUBBER CO (San Francisco, California) issue their Catalogue No. 15, of Mechanical Rubber Goods, comprising rubber and cotton hose for dredging, mining, fire department, steam, air, oil, wine, and water conducting, including wire wrapped and armored hose; rubber belting, concentrator belts, sheet and piston packings, rubber mats and tiling, and a variety of molded specialties, together with the firm's patented reel and other hose accessories. The catalogue is well illustrated and includes prices. [5¼"×7¾". 70 pages.]

THE CONGO RUBBER PROSPECT.

IN their annual review of the Antwerp rubber market, for 1903—the statistical details of which appear on the market pages of this Journal—Messrs. Grisar & Co., brokers, say:

"In spite of the ever increasing transportation facilities, and the growth of commercial relations with the interior of the Congo Free State, the total amount of the importations of Caoutchouc from the Congo has scarcely increased for a period of several years.

"We mentioned in our last annual review the preservative measures enacted by the government of the Congo Free State for the purpose of reestablishing the forests which produce Caoutchouc at the same rate, and according to the supply furnished from them. It is known, that there must be planted annually a number of Caoutchouc trees, or *lianes*, which must not be less than 500 plants per ton of Caoutchouc gathered during the same period of time. The *personnel*, which was first considered necessary to take charge of the carrying out of the legal provisions relative to this subject, have been doubled. This permanent supervision, which is exercised with the greatest vigilance, has succeeded in calling attention to certain negligences as well as several infractions of the law respecting the replanting of Caoutchouc trees, the perpetrators of which, in addition, have been made subject to judiciary actions. The greater number of the guilty parties were fined in amounts varying from 500 to 6000 francs, in addition to the obligation of setting out plantations, which they had failed in doing.

"The public prosecutor, upon requisition from the forest officials, who were invested with the necessary powers for this purpose, has likewise been compelled to take up the subject of the extraction of Caoutchouc, where in certain localities the native gatherers had still disregarded the law, which does not authorize the gathering of Caoutchouc from trees or *lianes*, except by means of incisions. It is to be noted that cases of this character are becoming more and more rare, as a result of the efficacious and constant watchfulness to which the native gatherers are subject.

"It is, besides, appropriate to note that the production of Caoutchouc has been restricted throughout all the districts of the state, with the view of not bearing too hard upon the native gatherers, and for the purpose of not prematurely exhausting the forests, and with the means to proceed with methods towards the reasonable reestablishment of the plantations of Caoutchouc producing plants.

"We note that the agents of the Congo Free State, as well as the greater number of the large Congo commercial firms, are everywhere independently undertaking to carry out the laws imposed for cultivating large plantations of Caoutchouc producers.

"Business in Caoutchouc, and cultivation of Caoutchouc producing plants being thus regulated under wise and foresighted conditions, it is not rash to affirm that from this point of view the future of the Congo Free State can be looked forward to with the very greatest confidence.

"At the risk of repeating ourselves, we again state that every effort should be made in Africa, relative to the betterment of the quality of Caoutchouc.

"In effect, the good quality of a lot is principally due to the care which is taken to thoroughly dry through the Caoutchouc. As a result of this precaution it contains a minimum amount of moisture, with less risk of becoming pitchy, and consequently it obtains the most remunerative prices. It suffices for us to state that the best Caoutchouc, if badly dried and hastily shipped, is worth here 30 to 35 per cent. less than the same

merchandise when well dried. For this reason, as is shown in the table annexed hereto, there is an increase in price of 19 to 20 per cent. in the well dried varieties, while the other varieties, containing much moisture, have been less influenced, to a certain extent, by the rise in prices.

"The same enlightened attention brought to bear in the harvesting, and the most conscientious manipulation of the article, concerning everything pertaining to the method of packing for shipment, has as a result produced more homogeneous products, and being in better condition, sales have been concluded with the greatest facility.

"In the Kasai region, among others, a noticeable change for the better has been found in the quality of the gum, as a result of the Kasai Syndicate's efforts, and in addition these products to-day have the support of the producers. Unfortunately we cannot say as much regarding the supply from the Upper Congo (white or bleached gums); from this place we have received a series of shipments in bad condition, very pitchy, and which have not been favorably disposed of. As to the methods practiced during the year under consideration, they have on the whole been very satisfactory.

"From the commencement of the year prices have pursued an upward course, establishing an average rise of 10 per cent. up to April. After a stationary period the market again took a strong upward tendency in July and August, with a progressive increase up to October; at this time the prices for Pará rubber strongly reacted as a result of heavy receipts, bringing down in their fall the various varieties, which fell about 9 per cent. We close the year at about an average run of 16 per cent. better than those at the end of 1902."

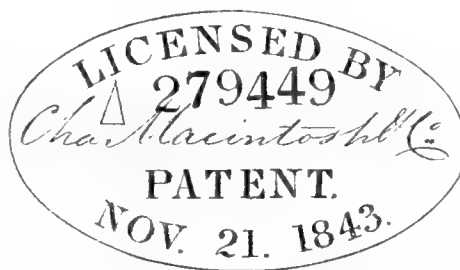
LICENSED BY MACINTOSH.

IT will be remembered by the historically inclined that the Goodyear patent in the United States for a combination of rubber, sulphur, and heat, was almost paralleled by the Hancock patent in

England, both inventors reaching the same result at about the same time and without knowledge of each other's invention. Among

the first vulcanized rubber goods made in England were those manufactured by Charles Macintosh & Co., in which firm Hancock had an interest. This firm soon licensed other companies to manufacture under the Hancock patents, the appearance of the license stamp being shown in the reproduction that is printed in connection with this article. These stamps were printed on gummed paper and were attached to the goods that the licensees marketed.

A NEWSPAPER report from Salt Lake City, to the effect that John Beck, a mine owner of Utah, has formed a company to extract rubber from a shrub growing in that state, said rubber having proved to be of excellent quality, was shown to Mr. B. G. Work, vice president of The B. F. Goodrich Co. He said that while he had seen many such reports from different parts of the west, he had never seen any of the rubber. No rubber manufacturer in Akron seems to have any faith in the alleged discoveries of rubber out west.



PAPERS ON AIR BRAKE HOSE—III.

AIR BRAKE HOSE IN SERVICE.

ELABORATE investigations have been made by the experts of many American railways, to determine the duration of service and the causes of failure in air brake hose. A matter of considerable expense depends on the relative economy of high grade specification hose and the ordinary twenty-four months' guarantee hose. Such of these investigations as are available prove to be very interesting and valuable. Abstracts and summarized conclusions derived from the reports of certain of these investigations will be given here.

Recent tests and comparisons made on the Atchison, Topeka and Santa Fé railway system extended over a period of four months, and included the history of 5372 pieces of $1\frac{1}{4}$ inch, 4 ply, air brake hose, costing 41 cents per foot and guaranteed for 24 months' service. Analysis of the data obtained shows that of the total number of pieces under test, 39.5 per cent. (2116 pieces) fulfilled the guaranteed two years' service; 6.5 per cent. (349 pieces) were serviceable beyond the guaranteed limit; and 54 per cent. (2907 pieces) failed for various causes, of which two thirds were largely preventable on the part of the railway authorities.

The following table gives a classification of causes of failure:

FAILURES DUE TO INFERIOR HOSE.	
Failures which makers must replace.....	414
Failures not recoverable from makers, owing to neglect to cancel dates on hose	560
Total.....	974
FAILURES CHARGEABLE TO ABUSE.	
Malicious cutting	103
Run over by carwheels.....	86
Mashed by buffers or couplers.....	76
Cut by gravel or cinders under nipple	194
Using hose for other purposes.....	168
Trains parting with hose coupled.....	162
Chafing.....	262
Kinking on angle cock	118
Hose being painted	86
Burnt in wrecks, etc.....	11
Cut by nipples while being mounted.....	601
Undeterminable causes.....	66
Total.....	1933

SUMMARY.

Failures due to inferior hose.....	34 per cent.
Failures chargeable to abuse.....	66 per cent.

The Santa Fé report discusses very fairly the preventable causes of the failure of air brake hose, with recommendations designed to greatly reduce the reckless waste of over 50 per cent. Its general conclusions are thus summarized:

The average life of the hose which failed to give 24 months' service, was $11\frac{1}{2}$ months. The average of all hose removed on the system (including that of foreign cars—i. e., cars from other roads) was 23.8 months. Certain superior grades were found to average 38, 51, and 61 months. This high grade hose came from foreign cars and failed from abuse and old age. If a marked improvement cannot be effected in the matter of reducing the amount of abuse inflicted on the hose, it would hardly be advisable to purchase a better grade of goods. The final conclusion is: "If, however, we can stop the slaughter, we can save money in the long run by buying a better grade"—in other words, a grade better than that ordinarily furnished under 24 months' guarantee of service.

ABOUT a year ago a series of careful tests of various makes of air brake hose was completed by the Testing department of the Chicago, Burlington and Quincy railroad, of which the following is a condensed account:

The test consisted in obtaining and placing in service on suburban trains, where the hose could be carefully watched, 12 samples of each of six leading makes of hose (72 samples in all). Care was taken to select different grades, as well as different makes, including some of the most expensive as well as some of the cheapest hose on the market, also several samples representing intermediate and varying values. One piece of each make was subjected to careful laboratory tests, such as are ordinarily employed, showing the bursting pressure, friction, stretch, and set of rubber, and the remaining samples were put into service. At the end of six months one piece of each make was removed and retested, with the idea of determining the rate of deterioration in service, and this process was repeated at intervals of six months until all of the test hose had been removed.

During this test, which extended over $2\frac{1}{2}$ years, it was necessary to remove 40 per cent. of the hose on account of its being worn out and injured; thus 60 per cent. was actually removed and retested. It is probable that if none of the hose had been removed for testing a considerably larger percentage would have been removed on account of being worn out before the test was completed. It seems safe to conclude that in a period of $2\frac{1}{2}$ years, at least 50 and perhaps 60 per cent. of the air brake hose has to be replaced on account of being worn out. The samples so removed are worn out by mechanical injury and not on account of decay, either of rubber or canvas. This was equally true of the low priced as well as the high priced hose.

The tests indicated that there was not a very great falling off in the bursting pressure or the stretch of the rubber tube in the course of $2\frac{1}{2}$ years, although there was considerable difference between the results obtained in the tests of the hose of different grades. It also developed the interesting fact that, although some of the more expensive brands, when new, showed a very high friction test, this deteriorated very rapidly and in most cases had fallen very low within one year's time of service. The tests also indicated that the cheaper grades of hose, having originally low friction, and low stretch of rubber, held up in the bursting pressure as well as the samples of higher priced hose that originally showed high friction and high stretching tests.

The conditions of the samples when removed showed that the life of air brake hose is determined in practically every case by mechanical injury, and not by deterioration of the hose, and the conclusions from this test were that it is not necessary or desirable, from the standpoint of expense, to buy hose showing high friction and high stretching qualities, since such hose costs considerably more than ordinarily well made hose, without giving much if any increased service.

In this connection it is interesting to note a few specimen facts brought out by the tests. Just as good service was obtained from a hose which showed a friction of $1\frac{1}{2}$ seconds in the original piece as from a much more expensive hose which showed a friction test of 40 minutes. Also, the hose which gave an original friction test of 40 minutes showed at the end of a year only 35 seconds; while the hose which gave an original friction test of $1\frac{1}{2}$ seconds, gave a friction test of one second

at the end of the first year, the same test at the end of two years, and a test of one half second at the end of $2\frac{1}{2}$ years. The more expensive hose gave an original stretching test of $4\frac{1}{2}$ inches, with a set of $\frac{3}{8}$ inch, and at the end of 16 months a stretching test of $3\frac{1}{4}$ inches with a set of $\frac{1}{8}$ inch. The cheap hose, when new, gave a stretching test of $2\frac{3}{4}$ inches, and a set of $\frac{1}{8}$ of an inch, and at the end of 18 months it gave a test of $2\frac{1}{2}$ inches and a set of $\frac{1}{8}$ inch.

These tests seem to justify the conclusion that a medium or even low priced hose with a good bursting test is the most economical in service, although care should be taken not to go to extremes in the matter of cheapness.

The Chicago, Burlington and Quincy specifications No. 15-A for air brake hose are based on the results of the above described test. Compared with those issued by many other roads it will be noted that the stretching test prescribed for the inner tube is very moderate, and that no friction test is called for, while the bursting test required is also moderate and designed to secure the proper quality of duck and care in making the hose. The life of various standard makes of air hose determined by tests on other roads varies from 12 to 38 months and averages 24 months.

THE SPECIFICATION CONDENSED.

These specifications prescribe that air brake hose shall be 4 ply and the inner tube not less than $\frac{3}{8}$ inch thick; each length to be 22 inches ($\frac{1}{4}$ inch variation allowed), and capped with rubber, vulcanized at each end; wrapping to be frictioned on both sides, with a distinct layer of rubber between each two plies. Inside diameter not to be less than $1\frac{1}{4}$ inches nor more than $1\frac{5}{8}$ inches. Standard lengths of hose to be labeled to permit of future identification [See THE INDIA RUBBER WORLD, January 1, 1903—page 115]. *Bursting Test.*—A section of 3 inches to be cut from the test hose and the remaining 19 inches mounted on standard nipples, where it must stand a hydraulic pressure of 150 pounds per square inch, without expanding more than $\frac{1}{8}$ inch in diameter, and subsequently a hydraulic pressure of 500 pounds per square inch for 10 minutes, without bursting. *Stretching Test.*—A section of inner tube 1 inch wide is stretched 300 per cent, and immediately released; marks 2 inches apart are then placed on it, and the rubber stretched until the marks are 8 inches apart, held for 10 minutes, then released for 10 minutes, and the elongation noted. The rubber must stretch 300 per cent. for 10 minutes without breaking, and must not take a permanent elongation of more than $\frac{1}{4}$ inch.

The opinion seems to prevail among railway authorities that a fair statement of the service obtainable from air brake hose, would be that, irrespective of quality, one third to one half of it gives satisfactory service, while the balance falls short of this, largely by reason of preventable causes, due principally to carelessness in the repair shops and on the road.

Among these preventable causes of injury and ultimate failure, perhaps that of most common occurrence is careless workmanship in inserting couplings and nipples, resulting in damage to the inner tube by cutting and to the duck plies by overstraining. In mounting air brake hose the ordinary procedure consists in holding the casting in a vise, cementing the nipple end with a rubber solution to aid in crowding the hose over it by a quick thrust of the same assisted by the weight of the workman's body. There can be no objection to this method of doing the work, provided the nipple is smooth and not so large as to overstrain the duck. Herein is found the importance of specifying enlarged ends which, by conforming approximately to the taper of the nipple, is relieved of strain and much of the consequent liability

to injury. A very practical invention bearing on this point is the combination of the enlarged end with a thickening of the inner tube at the end of the taper, thus forming a reinforcement or cushion of rubber to receive the wear caused by bending

ing about the end of the nipple. Figure 1 illustrates this arrangement which has been patented by The B. F.

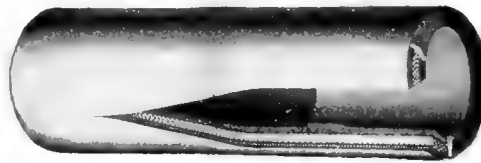


FIG. 1.

Goodrich Co. (Akron, Ohio). Its practical value has been demonstrated in service, the "Akron" brand air brake hose giving from 36 to 40 months actual service.

A simple mechanical means for coupling air brake hose is illustrated in the diagrams of Figure 2 which show the apparatus in use by the Chicago, Milwaukee and St. Paul railway. The upper portion of the figure shows the machine in place. A crosshead, connected to a hand lever, carries half an air brake hose coupling to serve as a holder for the part to be inserted in the hose, which is held for that purpose in a vise arrangement shown clearly in the lower half of the figure. The vise is held securely shut on the hose by means of a link arrangement locked down by a cam lever which throws up over the handle portion shutting on the hose. With this arrangement a man can couple about 140 pieces of hose per day, without the great effort necessary when done by hand.

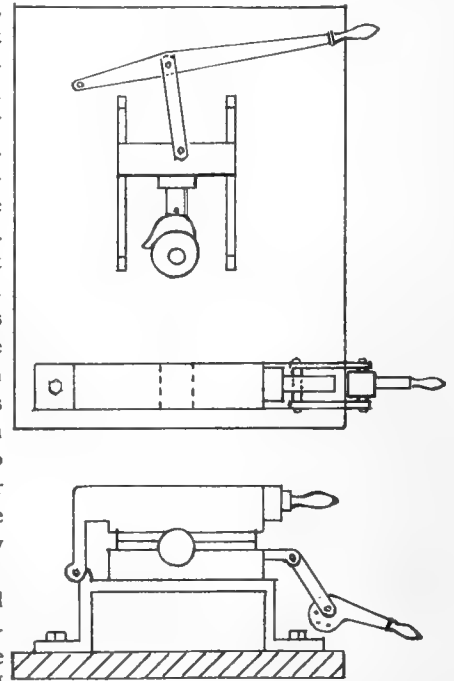


FIG. 2.

Figures 3, 4, 5 and 6 illustrate typical injuries to air brake hose. The first of these (Fig. 3) shows a break caused by injury to the inner tube by the insertion of the nipple. That caused by separating cars without uncoupling the air hose is shown in Figure 4. In this instance the friction uniting the plies was evidently low grade, permitting the bias duck to pull out in the form of a curl like a shaving. A better quality friction would have held the plies so firmly united that the hose would have broken abruptly. Figure 5 shows the effect of chafing. In this case the rubber

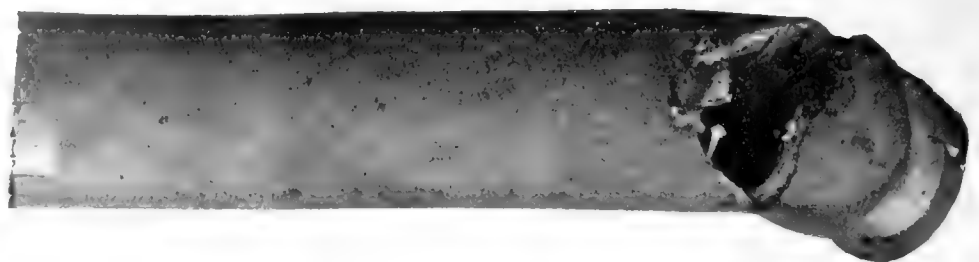


FIG. 3.

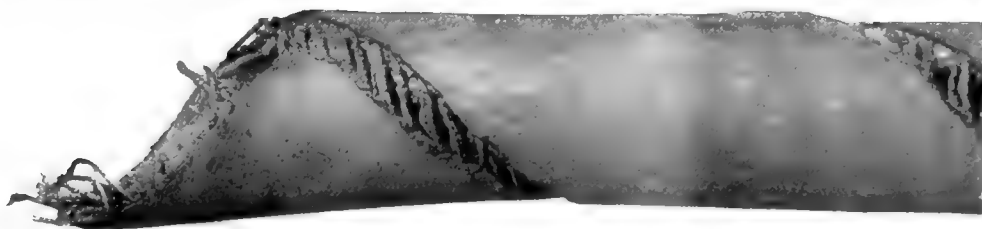


FIG. 4.

cover has been largely removed and the various layers of duck exposed and in one place the wall of the hose completely cut through. Faulty workmanship is shown in the hose illustrated in Figure 6. The break occurred at a seam in the duck which had not been lapped sufficiently to secure a proper hold. There is no reason why the joint in the duck should not be as strong as any other portion, if carefully made and overlapped one inch. In the example illustrated the lap did not exceed a half inch.

The matter of flexibility in air hose is of especial importance during the extreme cold weather experienced in the northwest. The effect of frost in stiffening hose to the point of rendering it liable to breakage by bending is given as the reason why the C. M. and St. P. railway company specify three ply hose, $\frac{1\frac{1}{2}}{32}$ inch thickness of wall in place of the customary four ply. It is

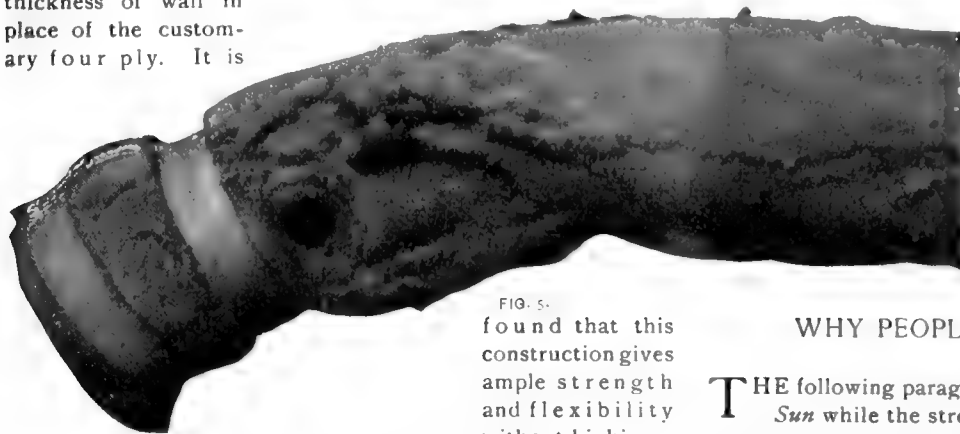


FIG. 5.

found that this construction gives ample strength and flexibility without kinking.

The practice varies in regard to the plies required in air hose. Some of the foremost roads of the country find three ply hose satisfactory and gain in the matter of first cost over four ply.

Some roads secure a short additional service from broken air hose by cutting out the unbroken part when sufficient length can be got intact and uniting two such pieces with an iron pipe nipple. This is not only questionable economy, but very inconsistent practice when compared with the same road's speci-

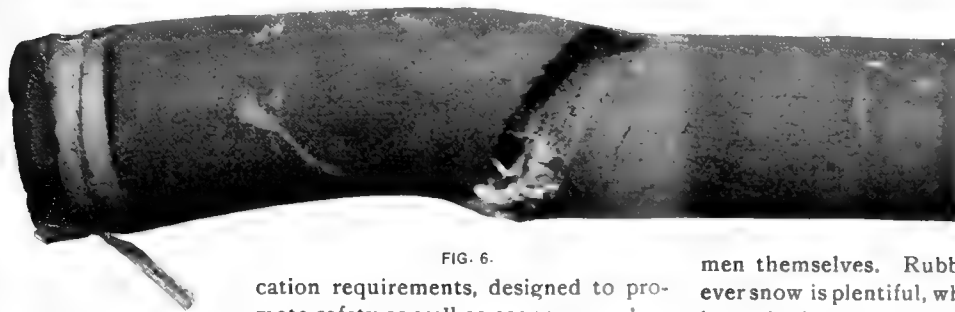


FIG. 6.

cation requirements, designed to promote safety as well as economy.

A very excellent method of securing service from the material of discarded air hose is that adopted by one of the leading American roads. The disused hose is split lengthwise on one side by means of a circular saw. In this condition it is passed

under a power punch through an attached device which spreads open and holds flat the split hose as it passes under the punch. In this way a series of nine or ten locomotive throttle valve packing rings are obtained from each hose and, owing to the high grade of the hose ma-

terial, a very superior quality of packing is thus secured and the amount of junk rubber to be sold is considerably reduced.

The absence of chemical requirements in the specifications of hose is due to the practical impossibility of prescribing them, and even more to the fact that the quality of the rubber employed is effectually regulated by the simple physical tests friction, strength, stretch, and set. The requirement forbidding the use of substitutes meaning, doubtless, the sulphurized oil products, is rightly insisted upon, although a reputable manufacturer would not be likely to use them. Refusing the right to use reclaimed rubber is not so necessary. It is an undoubted fact that the intelligent use of high grade reclaimed rubber results in a much better compound for the money than can be produced without its aid.

This is because of the fact that it is essentially a fair quality of vulcanizable stock, possessing the physical properties of new rubber to a marked degree. There is no adequate reason why its use should be denied to the manufacturer of air brake hose if the resulting stock fulfills all the requirements of the physical tests specified; a condition which is well within the bounds of possibility.

WHY PEOPLE BUY RUBBER SHOES.

THE following paragraph, which appeared in the New York *Sun* while the streets were covered with a foot of snow, repeats an assertion which appears year after year, to the effect that people buy rubber shoes to cover defects in their leather footwear:

The demand for overshoes is one of the best indications of what the times may be. When money is plentiful there are few persons who want them, for the reason that they are able to buy new shoes. When money is scarce, however, the price of overshoes is better suited to the means of most persons than the purchase of a new pair of shoes would be. The proprietors of shoe stores are thus able to keep a more than usually accurate tab on the state of the public prosperity. But nobody could fail to regret that the real purpose of over shoes should be so much misunderstood that they should be used only when there are weaknesses in the under coverings.

According to this idea, the rubber shoe manufacturers should have their harvest during hard times—the poorer the people, the better for the rubber trade. Such, however, is not the observation of the rubber

men themselves. Rubber footwear is in good demand whenever snow is plentiful, whether the people are rich or poor, and is not in demand at any other time.

GEORGE ADE, in his inimitable "Fables in Slang," has coined a new phrase, which shows an intimate knowledge of the rubber business. He calls rubberers "Goodyear specialists."

RUBBER AND TEXTILE TESTING MACHINES.

THE textile fabrics embodied in rubber goods are designed to give the finished product the element of strength required to adapt it to the conditions of service. Hose for all purposes, and belting, are notable examples of rubber goods designed to withstand heavy strains in service. The element of strength is also important in such lines as footwear and clothing, carriage cloths, tires, and many other lines which might be specified.

A convenient and accurate mechanism by means of which exact knowledge of the strength of fabrics can be ascertained is very necessary. Several machines specially adapted to this work are to be had in the market. Among these are the "Arch power" machine of Riehlé Brothers, and a vertical form made by the Falkenau-Sinclair Co., both of Philadelphia. Figure 1 represents the first of these testing machines. It has a capacity of 600

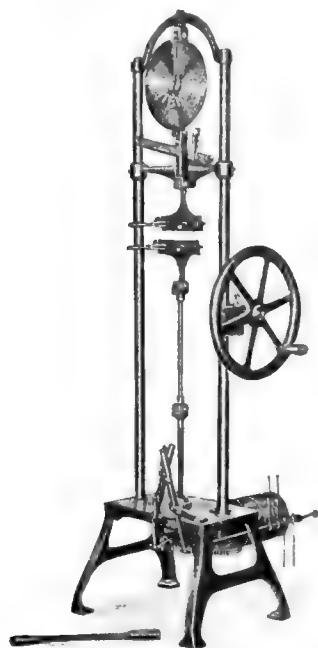


FIG. 1.

pounds pull and may be operated by either hand or belt power. The power mechanism is extremely simple, consisting of a worm and gear driven by pulleys through straight and crossed belts. A conveniently arranged lever disengages the worm and the machine can then be operated by throwing the miter gear into mesh and using the hand wheel. The strain is measured by a standard spring balance and the recoil is taken up by a pair of wedges which follow the downward pull and prevent shock to any extent. An idle index indicates the maximum load or breaking strain of the specimen. The machine as illustrated is designed and constructed for the bureau of equipment of the United States navy yard at New York. It is operated by a one sixth horse power motor.

The vertical form of machine as built by the Falkenau-Sinclair Co. (Fig. 2) is very compact and arranged for hand power operation only. The strain is applied to the cloth by means of worm gearing, and is indicated by a maximum hand on the dial of a spring balance, and the recoil of the balance is obviated by a following up wedge all precisely as in the "Arch power" machine. The hand lever shown immediately under the dials in both forms of machine is for controlling the release of the spring of the balance when the wedge system in the rear is disengaged. For rapid work the worm can be thrown out of gear and the screw run up or down rapidly by the hand wheel. The machine is built in two sizes for 200 or 600 pounds capacity.

Another machine of horizontal form, built by the same concern, is specially designed for applying a tensile test to rubber. Figure 3 illustrates this machine as used, somewhat modified, in the testing room of the bureau of equipment at the Navy Yard. This machine consists of a bed plate, movable upon which is a spring balance and a grip for the test piece, and between them a removable wedge which follows up the pull on the

balance and holds it at the maximum strain when the break occurs. These movable parts are made so by being mounted on small trucks or wheels to reduce friction. The strain is applied through a screw by means of power or the hand wheel at the end of the machine.

There is also a hand wheel at the side which operates a rack and pinion for moving the carriage rapidly to its original position after a test has been made. Opposite the movable grip is a fixed one, which, however, can be made movable by removing a stud. In this way tests for stretch and set may be made by attaching dead weights to the hook by means of a cord passed over the sheave. The machine is also provided with a graduated scale and pointers with which the original reference marks on the test piece may be followed as the specimen is stretched and thus the elongation be determined.

Numerous careful tests, by the bureau of equipment, Brooklyn navy yard, under widely varying conditions of dampness of the goods and the hygrometric state of the air have demonstrated that the only reliable tests of the strength of textiles are those obtained where the

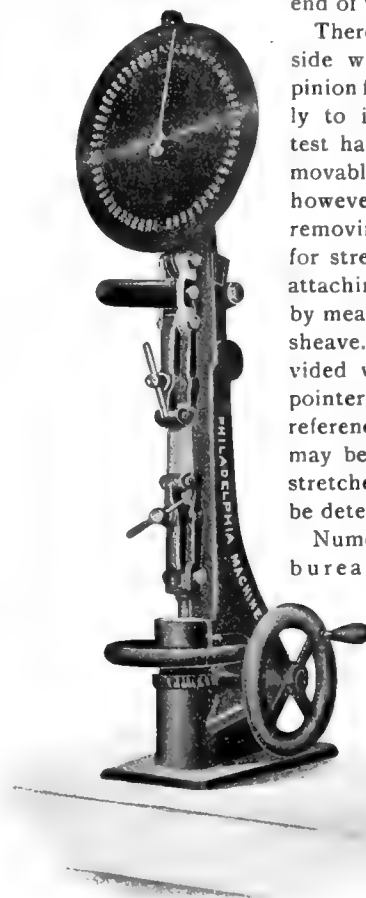


FIG. 2.

pieces have been prepared test subjected to 150° F. for six hours and are taken singly from the drying oven and promptly

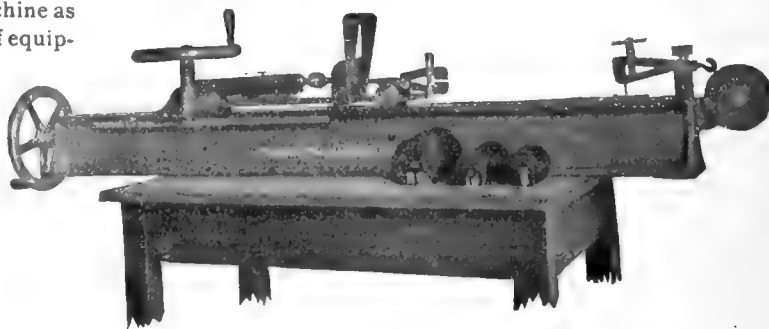


FIG. 3.

broken in the machine. These are the specified conditions of test under which all grades of duck are purchased for the United States navy.

PORTABLE PNEUMATIC TOOL OUTFIT.—There is in use on the Great Southern and Western railway, in England, a car designed for repairs to bridges and other work along the road, equipped with an outfit of pneumatic tools supplied by the International Pneumatic Tool Co. The outfit embraces a steam driven air compressor, 12 HP. boiler, an air reservoir 6 feet long and 2½ feet in diameter, and an assortment of hammers, riveters, drills, and the like, together with several lengths of metal protected rubber hose.

VULCANIZATION AND VULCANIZING TEMPERATURES.*

IF it were not known, as the result of many chemical analyses, that in vulcanization there is a chemical union of Rubber and Sulphur, we would be justified in inferring that the union is the result of a chemical process, from the fact that it proceeds in accordance with rules which observers have deduced from a large number of observations of chemical processes in general.

The Rubber hydrocarbon is composed of 10 parts of Carbon and 16 parts of Hydrogen, or a multiple of these numbers, and therefore belongs to that class of hydrocarbons that are able to form combinations. Hydrocarbons having a much larger proportion of Hydrogen do not form additive compounds and are therefore called saturated hydrocarbons. The union of Rubber and Sulphur is brought about by the influence of heat in the same manner as many other sulphides are formed. The union also proceeds more rapidly with each increase of temperature, and more slowly with each decrease of temperature, which is a rule applicable to chemical processes in general. Neither the Rubber that has been vulcanized nor the Sulphur of combination is any longer soluble in their usual solvents. The freezing point of vulcanized Rubber is very much lower and the boiling point much higher than the freezing and the boiling points of crude rubber—if Rubber can be said to have a freezing or a boiling point. The lowering of the freezing point of a substance and the raising of its boiling point is a reliable indication of a change in the chemical condition of the substance.

In the sense that the boiling point of a substance is the temperature of ebullition, rubber has no boiling point. But in the sense that the boiling point is the temperature at which the substance decomposes, a sense in which it is often used, both crude and vulcanized Rubber have boiling points.

In the sense that water freezes and forms ice, crude Rubber has no freezing point. But it stiffens as the temperature falls near the freezing point of water and has all the physical appearances of having been frozen. But, being an uncrystallizable substance, it cannot crystallize as water does when it freezes. When the temperature rises above its freezing point, there is no change of form, as when ice turns to water, or when a metal melts. It merely resumes its normal condition without having its characteristics changed in the slightest as the result of the freezing. This normal condition is retained, when subjected to a rising temperature until, at a temperature no higher than those employed in vulcanization operations, its structure changes and the substance decomposes.

As soon, however, as masticated Rubber is compounded with a proper quantity of Sulphur and Litharge for the temperature to which it is to be submitted, there is immediately a change in its characteristics. It freezes at substantially the same temperature as before, showing that in this respect, Sulphur has yet brought about no change. The boiling point, however, (temperature of decomposition) of the compounded Rubber is immediately changed, and the compound cannot be injured by any proper vulcanizing temperature to which it may be submitted. But if the masticated Rubber, before the addition of Sulphur, be submitted to the same temperature, it decomposes and is no longer Rubber, whatever may be its constitution.

The compounded Rubber, it is true, softens at first under the influence of a rising temperature, but it does not decompose,

and as soon as the heat is removed, it either assumes its normal condition or is partially vulcanized. If the heat be continued long enough at proper temperatures, the compound gradually becomes vulcanized Rubber. But, at no time after the Sulphur is added to the masticated Rubber until vulcanization is complete, does the action of heat affect the compound injuriously.

Thus, Sulphur has a very marked effect on Rubber immediately on being incorporated with it; or, in other words, immediately on being brought into close contact with every portion of it. What is the nature of this effect? What can it be, except that the change which we call vulcanization begins with the incorporation of the Sulphur? How else can the action of the Sulphur be explained?

If Rubber vulcanizes at low temperatures, this effect of Sulphur is easily understood. But, if it only vulcanizes at high temperatures, as some contend, the effect produced by Sulphur at lower temperatures cannot be explained. Theoretically, there is no reason to believe that Rubber does not vulcanize at low temperatures. Because we have observed it to take place only at high temperatures, is no proof that it does not take place at lower temperatures. "We have in general no ground for supposing that any chemical process which takes place at a higher temperature cannot take place at a lower." To illustrate this, let us consider the familiar subject of combustion. We observe it taking place rapidly at high temperatures. But because we do not observe its progress at lower temperatures we cannot say that combustion cannot then take place. The fact is that "no temperature can be found at which combustion just begins, and such that just below this point no combustion takes place at all." And so it cannot be said that any temperature has yet been found at which vulcanization just begins and such that just below this point no vulcanization takes place at all.

It is therefore desirable to know at what temperatures Rubber is commonly vulcanized on a large scale, and then to ascertain by careful experiment the range of temperatures in which it readily vulcanizes. Regarding the exact temperatures at which Rubber is actually vulcanized on a commercial scale, very little is known even by the most careful operator, when the steam or the dry heat process is used. In vulcanizing by either of these processes there is generally no definite relation at all between the temperature indicated by the thermometer and the actual temperature of the Rubber undergoing vulcanization, and from the nature of the case, as these operations are usually conducted, there can be none.

Such operations are carried on in large closed cylinders, often 60 feet long or longer, or in large close rooms often 12 feet wide and 25 to 30 feet long. In the former case live steam is admitted to the cylinders generally from two inlets, and in the latter case the chamber is heated by coils of steam pipe which are a little below the level of the floor. It is evident that one or even two thermometers cannot indicate the correct temperature of all parts of either these steam or dry heat vulcanizers, *unless the vulcanizing medium be kept in rapid circulation, even when no articles are being vulcanized.* The loss of heat by constant radiation requires a constant supply, which tends to maintain the unevenness of the temperature. But if the chambers be filled with goods, say hose on hollow iron hose poles in the steam vulcanizer and boots and shoes on wooden lasts in the dry heat

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vulcanizer, the conditions are such that there must be a great disparity between the temperature of the vulcanizing atmosphere and that of the goods to be vulcanized. An ordinary charge for the dry heat vulcanizers would be perhaps 10 to 15 tons, including the cars, lasts, and the boots and shoes themselves, and perhaps 5 to 10 tons in the steam vulcanizer, including the iron poles on which the hose is made. This great mass of material must in either case be brought to the temperature at which the goods are vulcanized and maintained there till the operation is complete.

If the surrounding atmosphere be at the same temperature as the contents of the vulcanizers, it is evident that the temperature of the contents will remain stationary. If the temperature of the atmosphere be but a little above that of the contents, it is evident that the temperature of the contents will rise extremely slowly. In order to raise the contents within a reasonable time to the temperature at which they are vulcanized, whatever that may be, the indicated temperature of the surrounding medium must at all times be considerably in excess of the actual temperature of the contents. The rubber articles themselves cannot be heated any faster than the iron hose poles, or the wooden lasts of the boots and shoes, which are very poor conductors of heat. At the beginning of the operation this disparity in temperature is of necessity great, but it gradually grows less and less until at the end of the operation it is not very large. But in no case, as such operations are usually conducted, is the rubber vulcanized at the temperature indicated by the thermometer, but at a considerably lower average temperature. It is not, however, necessary that the thermometer should indicate the exact temperature of the rubber articles. When the thermometer indicates a certain temperature, experience teaches how long it is necessary to subject the articles to that indicated temperature, regardless of the actual temperature of the articles themselves.

In order to know the exact temperature at which rubber is being vulcanized, the bulb of the thermometer must rest on the rubber and be partly imbedded in it. A difference of a few inches will often show a surprising difference in the temperatures indicated by two thermometers, one of which indicates the temperature of the vulcanizing chamber, and the other that of the rubber itself.

Conflicting statements of different writers as to the temperatures at which rubber vulcanizes may be partly reconciled by bearing in mind that some may have given the temperature of the vulcanizing chamber, and others the exact temperature of the rubber while undergoing vulcanization. In some instances, however, such statements can be explained by neither of these hypotheses, but only on the supposition that they were based on reports made by persons without practical knowledge of the facts. In Seeligmann's excellent work on "Indiarubber and Gutta Percha," occurs the following statement: "Heinzerling has satisfied *himself* by a series of direct experiments that when rubber is submitted to a temperature of 100° C. (212° F.) for four or five hours there is no trace of vulcanization. In order that vulcanization may take place, it is *indispensable* to always exceed the melting point of Sulphur, that is to say 113° C. (235.4° F.)." It is difficult to understand the basis of the latter statement, for every manufacturer of experience knows perfectly well that rubber vulcanizes below 235.4° F. Seeligmann could not have made this statement as the result of experiments made by himself, but must have relied on reports of some person who was himself ignorant of the facts. Heinzerling's statement is not correct, though it may be based on a slight foundation. A compound consisting of 12 pounds well dried fine Pará rubber, 6 pounds litharge, 6 pounds whiting,

and 6 ounces of Sulphur, a very common compound, vulcanizes rapidly in ten hours by the dry heat process at 212° F., and shows signs of vulcanization when it has been submitted to that temperature for four or five hours. But, if the same compound be submitted to the same temperature surrounded by metal and the air be carefully excluded it vulcanizes well in four and one half to five hours. Signs of vulcanization will be observed after about two and one half to three hours. If, however, the percentage of Sulphur in the compound be increased from 3 per cent. to 7½ per cent., thorough vulcanization will take place at 212° by the dry heat process in five hours. If the air of the vulcanizing chamber be impregnated with Sulphur, by sprinkling a little of it on the floor, then the compound containing 3 per cent. of Sulphur vulcanizes readily at 212° F., in three hours, and that containing 7½ per cent. in two and a quarter hours. The latter compound will be fairly vulcanized in about an hour and a quarter. Heinzerling therefore could not have been very thorough in his experiments. Any person wishing to test these statements should use an accurate chemical thermometer and be careful to keep the bulb partly imbedded in the rubber so that the exact temperature of the rubber will be indicated. No theory can be considered established from the result of one or two experiments. In order to establish any theory a large number of experiments under varying conditions are absolutely necessary.

In considering the subject of vulcanization, the very foundation of any investigation should be the temperatures at which the rubber vulcanizes. Any error in this respect is inexcusable, as all theories based on such an error lose whatever force they might otherwise have. Rubber not only vulcanizes readily at 212° F., but at much lower temperatures provided the proper proportionate time be allowed, and also provided that a reasonable compound be employed. The compounds given above vulcanize readily both at high and at low temperatures, as proved by a large number of direct experiments made at every 10 degrees between 172° and 445° F. The result of these experiments and the general rule applying to chemical combinations, warrants the assertion that vulcanization can proceed at temperatures down to and possibly below the ordinary temperatures, if sufficient time be allowed and if the compound be adapted to the temperature. Furthermore, rubber vulcanized at the low temperatures mentioned is fully as strong and elastic as rubber vulcanized at high temperatures. It resists the action of heat and cold and the usual solvents of rubber in every respect the same as if it were vulcanized at high temperatures. No difference can be discerned in any of its physical or chemical properties. Hence, whatever be the temperature at which rubber may be vulcanized the result of vulcanization must be the same so far as the result of the reaction is concerned. "Different bodies which consist of the same substance agree not only approximately, but exactly in their properties. Hence, bodies that agree exactly in their properties consist of the same substance. This law is the fundamental law of chemistry."

THE governor of the Straits Settlements—Sir Frank A. Swettenham—in an address before a recent convention of native sultans and datos at Kwala Lampur, in Selangor, said, on the subject of planting: "The prospects of rubber are so good that unless some unforeseen disaster happens the future is full of promise for those who have taken up this cultivation. The area at present under rubber (principally the Pará variety) is given approximately at 16,000 acres." These figures relate to the Straits Settlements proper and the adjacent Federated Malay States. Sir Frank, by the way, after a long service in the Far East, has retired.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

IT cannot be said that the past year witnessed anything of particular note in the trade. No new works were started and only one minor concern got into difficulties. That it has been a trying year, more especially in the latter half, on account of the high price of crude rubber, needs no

1903—
A RETROSPECT.

emphasis, and it is satisfactory to note that the New Year opens with a better outlook in this direction. American and German firms continue to establish London offices and to swell the competition for the home trade, a fact which is causing erstwhile Free Traders to examine Mr. Chamberlain's proposals with attention. Among firms whose position has materially improved during the year may be mentioned the Midland Rubber Co., Limited, of Birmingham, who have successfully emerged from a troublesome period. A good deal of experimental work has been done in the endeavor to compete with the Russian makers of rubber sponge, but only a limited amount of success has to be recorded. It would appear that the lasting property of such sponges has been somewhat exaggerated, and I should not be surprised if their popularity became less pronounced. Undoubtedly the particular branch of trade which has shown the largest degree of expansion is that concerned with the rubber heel-pad, which has become immensely popular with all classes. The files of the Patent office show that inventors have been busy in this direction during the past year, and many developments may yet be expected before the business reaches its zenith. Outside tire litigation, the law courts have not had to deal with much of trade interest. A case, however, in which a rubber firm was fined for causing a nuisance by the emission of affluvia from albuminous rubber is of importance, and it should strengthen the hands of those who advocate the cleansing of rubber from its principal impurities before it leaves the port of shipment. The fires that have occurred have been principally on the premises of dealers in waste rubber, euphoniously described in newspaper reports as rubber manufacturers. The failure to take reasonable precautions, coupled with the non-employment of night watchmen, is largely responsible for these fires. With regard more especially to the north of England, the unsatisfactory state of affairs in the cotton and iron trades makes the outlook as regards mechanical rubbers not a very brilliant one for the first portion of the New Year.

THERE can be little doubt that the working of railways by electric power will increase in Great Britain. That such form of traction is eminently suited to the Metropolitan railway of London admits of no question; that is, primarily, as regards the smoke nuisance.

MATTERS
ELECTRICAL.

With regard, however, to non-subterranean lines, the question becomes one of economy only, and much interest attaches to the electrification of the Lancashire and Yorkshire railway between Liverpool and Southport, which is now in progress. The matter is interesting to the rubber trade mainly because of the insulated cables required. With regard to the line just referred to, a current of 6000 volts with transformers is used, the cable work being sublet by the contractors to Messrs. W. T. Glover & Co., of Trafford Park. Talking of Trafford Park leads me on to say a word or two about the British Westinghouse company. It has come, somewhat as a surprise to a good many people, that the financial results of the past year do not admit of a dividend on the ordinary shares. It was generally sup-

posed that smaller British firms doing much the same class of business as the Westinghouse would find the new competition a very weighty matter, instead of which we find that firms like Dick, Kerr & Co., of Preston, have not only maintained their 10 per cent. dividend but are successfully competing with the American invasion. It is said, though I speak without any personal knowledge, that American methods of management are not easily adaptable to the British workingman, and certainly to rely on the somewhat slender reed of analogy there is plenty of evidence from other countries to support this contention. Turning to another matter, acrimonious discussion is not at all infrequent among members of local governing bodies with regard to the placing of contracts for electrical equipment with foreign firms. The explanation given is generally either that the particular goods are not made in Great Britain or that the foreign material is cheaper. At the present times the dry core telephone cables of the General Electric Co. (*Allgemeine Elektrizitäts Gesellschaft*) of Berlin, are being laid in Manchester, though the British Insulated and Helsby Cables Co. are large and successful manufacturers of this same class of cable.

THE British acting-consul at Coruña, northwestern Spain, in a Foreign office report, draws attention to the fact that the demand for galoshes in that damp climate is nearly all met by the Boston Rubber Shoe Co.

FOOTWEAR.

Much the same must be said, I think, in the case of a larger town, London, to wit., for on all hands one hears appreciation of the goods of this company. As regards Spain, the Americans apart from any particular excellence of their goods, have been quicker than the British to issue circulars and price lists in Spanish, the British defection in this respect being a cause for continual jeremiads on the part of our consular representatives. As regards the weather so far in Great Britain, the absence of snow will no doubt prove a deterrent to sales, compared at any rate with Spain where the snowfall, especially in Madrid, has been very heavy.

ALWAYS ready to make amends for any false impression which I may inadvertently have given rise to or appeared to support, I have pleasure in testifying to the great progress recently made by this company in their business with the rubber trade. The

NORTH WESTERN
RUBBER CO.

fact may not be altogether palatable to older established firms in this country, but there is no use blinking it. Probably the reports which were current as to the paucity of the company's business arose from ignorance of its continental transactions.

BRIEF reference to this motor tire has already been made in these notes, and I now propose to amplify my former remarks.

THE SEDDON
MOTOR TIRE.

The name of Mr. E. H. Seddon is by no means unknown to the cycle tire world, though it is only recently that he has turned his energies towards the perfecting of motor tires. In Seddon's new red motor tire the strands of the fabric have unvulcanized rubber forced between them, being molded by high pressure into a compact material, the idea being to lessen the internal heat by preventing friction between the several cards. This arrangement, in conjunction with a high quality of rubber, has given a tire of great durability, as evidenced by the numerous and severe tests to which it has been subjected. In this tire an inner tube may or may not be used. I understand that in the trials

it was not used, and is only advocated by the management as an accessory, to be used in case of emergency. The prevention of side slipping has been kept prominently in view in the design and development of this tire, this desideratum being satisfactorily attained by employing a square tread of about 1½ inches wide. The tire is attached to the wheel by two loose flanges which are bolted to the felloe, it being sufficient to remove one flange only in removing it from the wheel. It can be fitted to all makes of wooden wheels if the edges of the existing rims are turned off. Further information will no doubt be obtainable by those interested at 291, Great Northern buildings, Deansgate, Manchester.

THE address just given leads me on to remark that this handsome new range of buildings is evidently popular with the rubber trade, for among the firms recently installed there may be mentioned The New Hudson Cycle Co., Brown Brothers Cycle Fittings, the Dunlop Pneumatic Tyre Co., Limited, and the Henley Telegraph Works Co., all of whom have an attractive exhibition of their goods at the street level.

A LARGE amount of rubber hose piping is used by the Vacuum Cleaner Co., of London, in connection with their process, which has now become fully established. For those who have not seen it at work I may say that it consists of a portable vacuum pump and accessories for removing dust from carpets without removing the latter from the floor, the work being performed rapidly and without causing any nuisance.

MESSRS. TURNER BROTHERS & CO., of Spotland Mills, Rochdale, who have long been suppliers of rubber packings, have now decided to become manufacturers thereof, and have recently put down complete machinery for this purpose. The installation, which includes washers, mixing rolls, and four spreading machines, has been carried out by Messrs. Francis Shaw & Co., of Bradford, Manchester, and the new works will very shortly be in full operation.

THE second general meeting of this company was held on December 18, in London. The capital issued paid up amounts to £112,500. The new factory at Greenwich is equipped for an output of about one ton per day, which, it is explained, can be increased at a small further outlay. To judge by the report, although satisfactory testimonials have been received, the more important of prospective purchasers still ask for further time before committing themselves to definite statements as to the utility of the company's product. There are no working details so far on which to comment and the chairman's optimistic expectations as to the business to be done in the next twelve months will be merely noted here as of possible future interest in the possible event of disillusion.

THE announcement that Herr Franz Clouth's book on the "Gummi, Guttapercha, und Balata" has been translated into English will be welcomed by many who are unfamiliar with the German language. I had the pleasure of visiting the works of Herr Clouth at Cologne a few years ago, and was especially pleased with the general cleanliness of the surroundings and the interest which was evinced by the proprietors for the well being of the workpeople.

THE announcement is made that Mr. Anderson, of Messrs. Anderson, Anderson, & Anderson, waterproofers of London, is to be a candidate for Parliament at the next election. It cannot be said that the trade is or ever has been represented in the house of commons to the extent which others of less magnitude and im-

portance have achieved. Indeed, at the moment I can only call to mind the name of the late Mr. Hugh Birley, M. P., in this connection. This gentleman, who was a partner in Messrs. Charles Macintosh & Co., was one of the representatives for Manchester before the redistribution of seats took place, his death occurring in 1883. Other members of this firm who have been asked to allow their names to be put forward as candidates have declined the honor. The idea that Mr. Fletcher Moulton, M. P., is connected with the rubber firm of George Spencer, Moulton & Co., has no foundation in fact. In these days of limited companies there are many members who could be named as having financial interests in the rubber trade, if they are not practically engaged in the manufacture. Mr. Fuller, member for one of the divisions of Wiltshire, is largely interested in the Avon India Rubber Co. of Melksham, and more than one of the large cable making companies could make their voices heard in the House did occasion arise. It is of course desirable for any trade under the provisions of the Factory acts to have spokesmen in Parliament, though it is open to doubt whether a discussion on the cold curing process would be received with much more attention than was accorded to the Hon. Walter Rothschild when discussing at length the question of the sale of undersized fish. But this by the way, with regard to Mr. Anderson's candidature, this being a non-political journal, from a trade point of view his success at the polls would be generally welcomed.

A LONDON contemporary, in giving the essence of a report made by Mr. Consul Kenneday, of Pará, to the government at Washington on this subject, mentions it as being of particular interest. The matter would undoubtedly be of most serious interest if the report is to be taken as reliable. British readers of THE INDIA RUBBER WORLD take comfort, however, in the criticism on this report contained in the December issue of this Journal, where it is asserted that Mr. Kenneday has confused the *Hevea* trees with those yielding "Caucho" or Peruvian rubber. The matter is one of importance on account of the wide publicity which alarmist notices in consular reports frequently obtain. No one expects a consul to be an expert in every one of the multitudinous trades to which he may make reference in his reports, but at any rate he should take some trouble to examine into the credibility of his informants. It will be remembered that the same author was not so long ago taken rather severely to task by our Editor for his references to the Balata forests of Brazil, the facts concerning which appeared to have been supplied either as a practical joke, or by some totally incompetent person. Perhaps the last word has not yet been said on the present matter, and any further reference to it from Nassau street would be read with interest.

THIS state, with its record of peace and prosperous financial conditions, is evidently more worthy of the attention of capitalists than are some other American republics with their everlasting political troubles. In addition to the recent spurt in gold mining, which has attracted American and Russian capital, a good deal is being done in rubber forestry, especially in the district of which Matagalpa is the center. It is the Ceara rubber tree to which particular attention is being paid. Four or five years ago, owing to the wasteful methods of collection practiced, a law was passed forbidding the collection of rubber for three years; this embargo being now removed the export of rubber should show an increase. It is, however, the replanting of denuded areas that the government desires, and to further this end a premium is given according to the number of trees actually planted.

NEW
OFFICES

NEW USE
FOR RUBBER HOSE.

NEW
PACKING
WORKS.

THE NEW
GUTTA PERCHA
CO., LIMITED.

NEW BOOK.

PARLIAMENT
AND THE TRADE.

REPORTED DESTRUCTION
OF PARA RUBBER TREES.

RUBBER
IN NICARAGUA.

RUBBER NOTES FROM EUROPE.

AN ACTION FOR INFRINGEMENT FAILS.

IN an action by the Dunlop Pneumatic Tyre Co., Limited, against David Moseley & Sons, Limited, for alleged infringement of patents, judgment was rendered in behalf of the defendants. The plaintiffs claimed an injunction to restrain the Messrs. Moseley from making and selling an outer detachable cover with a lining suitable for the insertion of wires, or with beaded edges, so that it was adapted for use in the manner described in the tire patent specifications of Welch and of Bartlett, both of which are owned by the Dunlop company. The Messrs. Moseley have been making such tire covers for a number of years. In the decision of the court it was pointed out that a large proportion of the trade of Moseley was export trade, and that the selling of tire covers for export was not an infringement. They also sold large quantities of tire covers to firms and companies who are licensees of the Dunlop company, and this was not infringement of the plaintiffs' patents. With regard to covers sold, not for export or to licensees, but to the general public, it was held that the sale of a cover alone was not an infringement of a patent which related to a combination of such cover with other articles. It appeared that rims suitable for both of the tires in question had been openly made and sold—that inner tubes and wires suitable for Welch tires were sold as ordinary articles of commerce. As a matter of law, the court was of opinion that the defendants were not infringing either of the two patents by merely making and selling the outer covers. Selling them for export was lawful; selling to licensees from the Dunlop company was lawful; and it would be placing too great a burden upon the defendant company to require them to ascertain the ultimate purpose to which any purchaser might put the cover, especially as such covers could not be claimed to be necessarily adapted for use solely in connection with tires under the Welch and Bartlett patents.

DUNLOP TIRE PROSPECTS.

At the last annual meeting of The Dunlop Pneumatic Tyre, Limited, Mr. Harvey du Cros, the chairman of the company, after reviewing the history of their connection with the motor tire trade, and their preparations for the future, said to the shareholders: "You have in the last year of our patent the largest contracts the company ever enjoyed—very much the largest—though prices, of course, were not so favorable. I think when I tell you we have arranged at our Para Mill [in Birmingham] for the production of 1,250,000 tires for 1903-04 you will realize that a great deal has been accomplished in holding the trade." Reference was made to the erection, during the year, of an entirely new manufacturing department, in the tire plant at Birmingham, for motor tires alone.

THE AUSTRALIAN DUNLOP COMPANY.

THE Dunlop Pneumatic Tyre Co. of Australia, Limited, (Melbourne), have now completed four fiscal years. The bicycle tire trade is not now what it was, but the manufacture of solid carriage tires and some other articles has been added, so that the total production is now larger than at any time in the past. It has not been found possible, however, to maintain the liberal rate of dividends at first adopted. The capital consists of £80,000 in 7 per cent. cumulative preference shares, £20,000 in non cumulative preference shares, and £70,000 in ordinary shares—a total of £150,000 [= \$729,975]. A large proportion of this represents goodwill, patents, etc., and the payment of dividends on the ordinary shares has been suspended, as placing too great a strain upon the business. In 1902-03 the gross revenue was £47,481, and the net profit £17,304. Divi-

dends on the preferred shares amounted to £7100. Wages and salaries amounted to £30,377. It would appear, therefore, that the business is important—and it has been intimated that the preference shareholders might supply sufficient capital to place the company upon an easier working basis.

THE UNITED STATES RUBBER CO. IN EUROPE.

THE annual dinner of the employés of the European dépôt of the United States Rubber Co., which occurred this year on January 2 at the Holborn restaurant, London, was as usual a thoroughly successful affair, enjoyed by all who participated. Besides the staff of the company, there were present representatives of several of the larger customers. The chairman was Mr. H. H. Holland, the manager, who referred feelingly to the loss which had been sustained during the year of their former manager Major John W. Knott. It was mentioned, by the way, that a son of the latter is now in the office. The business of the past year was referred to as not only having been satisfactory, but as showing an increase over the past, but their success had not spoiled the business of any British manufacturer. "They had greatly increased the trade for all concerned in the rubber shoes. They had come over here with their new lines, light weights, etc., and these goods had sold, and their competitors, rightly enough, had taken note of the improvements, and now nearly all of them had more than they could do. Except for the manufacturing expenses, their business in Europe was conducted by Englishmen and wages paid to Englishmen. Whether the country was free or protected, it was enterprise that made business go."

GREAT BRITAIN.

At a special meeting of The Goodyear Tyre and Rubber Co., Limited, in London, on December 21, it was resolved to go into voluntary liquidation, and Albert Charles Hills, the manager, was appointed to carry the resolution into effect.

=The Limpley Stoke India-Rubber Co. have been organized to reopen the premises occupied lately by Wallington, Weston & Co. (now of Frome), at Limpley Stoke, Bath, England, and are now manufacturing solid rubber tires.

=The *India-Rubber Journal* reports the death, at Edinburgh, in his eighty-sixth year, of Mr. Hay Downie, who in 1869 patented a rubber horse shoe, which was one of the first placed on the market, and which was the basis of the success of The Patent Horse Shoe Co.

=George Angus & Co., Limited (Newcastle-on-Tyne), pay 10 per cent. on last year's trading, and carry forward £41,730.

GERMANY.

At the general meeting of the Bremer Gummiwerke Roland, Actiengesellschaft, at Bremen, on December 1, it was voted to convert the ordinary shares into preference shares of 1000 marks by the payment of 500 marks on each. The company began business in 1901, with a capital of 800,000 marks, increased later to 1,000,000 marks [= \$238,000], but have not yet paid a dividend. They are engaged in the manufacture of mechanical rubber goods.

=The Actiengesellschaft für Gummilösung vormals Otto Kurth, of Offenbach—the Rubber Solution Co.—reports profits of 50,632 marks [= \$12,050] for the last business year, and will pay 8 per cent. on a capital of 500,000 marks.

FRANCE.

MESSRS. GUSTAVE JOB & CIE. (Paris), importers of India-rubber, Gutta-percha, and colonial products, advise THE INDIA RUBBER WORLD of their removal to 7 and 9, Passage Violet. Monsieur Job has been engaged in the rubber trade for over fifteen years, of which ten were spent in Brazil.

THE FOUNTAIN PEN INDUSTRY.

ALTHOUGH fountain pens have been in use long enough for the earlier patents to have expired, it has only been within the last half dozen years that the trade has begun to assume really important proportions. At the present time the manufacture of fountain pens is an industry employing many hundreds of workmen, the advertising of fountain pens calls for a large expenditure of money, and their sale is quite an item in the business of stationers and other stores. These pens can be had for almost any price, from \$1 up to \$25 or \$30, but the standard grades, which have become widely known, are rarely retailed for less than \$2.50. The increase in cost comes with additional size to the gold pen and extra workmanship upon the holder.

A visit to a factory in New York city which employs more than 100 hands was an interesting experience. This establishment purchases its hard rubber cones or tubes and finishes them to suit the various brands, but is considering the advisability of putting in its own rubber machinery and making its pens entire from the crude product up. Its gold pens are made entirely in the factory and careful labor and delicate machinery are required. From the bar of gold to the finished pen requires a score of different processes and, in some steps, highly skilled workmanship. The gold after being melted and alloyed with the proper metals is cast into a brick or block which is afterwards rolled out into a long thin ribbon and from this under high pressure dies the pens are cut in various sizes. After this they are trimmed and pointed, split, shaped, polished, and marked. When the pens are heated to a malleable point a tiny fragment of irridium, so small that the workmen must use a magnifying glass to see it, is welded on the point. When the pen is later split, this fragment of irridium, small as it is, must be sawed exactly half in two. This delicate operation is accomplished by a smooth disc of copper revolving like a circular saw at a high speed. Later on, each section of the irridium tip is ground under magnifying glasses so that it has eight equal faces on the exposed side that will touch the paper. This requires extremely careful workmanship and of course adds to the cost of the pens of the better class.

The turning of the hard rubber handles is almost exclusively lathe work and requires expensive tools if not such delicate workmanship. Tools dull very rapidly in turning hard rubber, and only the finest steel can be used. The cores must be turned to an exact size, must be made to fit perfectly and accurately in every part, and must be highly polished. In many pens they are ornamented with chasing and in the more elaborate holders gold and silver bands or embossing are added. The security of the pen, however, must be in the perfect adjustment of the parts that prevents leaking and regulates exactly the proper flow of ink. Only accurate workmanship on the rubber tubes can secure this.

Accurate statistics of the fountain pen manufacture are not compiled up to the present time, and as the trade has doubled in the last five years, past figures are not reliable enough to quote. From the first of September until the holiday trade flags, is the busy season for the manufacturers and during this period, according to the estimate of one manufacturer, who has been in the business for a dozen years, the output of pens in the United States is about 30,000 per week. Of this number the leading maker and most widely known brand makes perhaps one third. None of the fountain pen manufacturers, however, makes his own rubber cores and in many instances some of the brands or styles which are most extensively advertised have no factory but are made up at the establishments which manufacture rival styles for different competing firms.

The industry has, however, become something of importance to the hard rubber trade, and as improvements from year to year are making the fountain pen more perfect and bringing it into more general popularity it will continue to increase in importance. The fountain pen is a feature of business and no longer a fad. It has achieved commercial recognition. It is only one of the many forms in which the demand for rubber goods shows the yearly necessity for increased supplies of rubber.

It may be added that a careful attempt was made, in the census of 1900, to estimate the production of fountain pens in the United States, but strict accuracy was not possible, owing to the fact that such goods are produced, in many instances, in establishments making other styles of pens or pencils, and a separate account was not kept of the different classes of products. It appears, however, that New York leads in the production of fountain pens, while Ohio is second in the industry. The total production for 1900 is reported at 830,384, and the selling value at \$707,023. The number credited to New York was 489,024, of the selling value of \$417,123. These values, of course, are the result to the factory, and not the retail prices.

Fountain pens were manufactured in England as early as 1835, but they were not satisfactory enough to warrant their use to any extent. Their first successful manufacture in the United States dates back only to 1880, or a little before. Originally, in England, there were two types of these pens, known as the Schaeffer pen and the Parker hydraulic pen. Schaeffer's pen had a reservoir for ink in the holder, and the ink was admitted to the pen by the pressure of the thumb on a projecting stud. Parker's pen also had a reservoir in the holder, which contained a piston operated by a screw stem and a nut in the end of the holder. The lower end of the reservoir being dipped in ink, the piston was drawn up by rotating the nut, thus filling the reservoir. The ink was rejected as required by a reverse motion of the thumb nut.

The early attempts to construct fountain pens were generally confined to the invention of contrivances such as internal tubes, ducts, valves, or springs, which were operated upon by the action of the nibs, and which forced the ink from a feeding pipe upon the pen, assisted by air admitted to the top of the holder to take the place of the exhausted ink. Pens dependent upon such mechanism were very erratic in their work, as the ink flowed either too slow or too fast. After many experiments to secure a continuous and properly regulated flow of ink into the pen, it was found that the best results were obtained by the use of a tubular holder tightly closed at its upper end, and at the lower end fitted with an ordinary nib pen made of gold, with an ink feeder lying adjacent to the pen to attract the ink from the reservoir. As the ink in the process of writing is withdrawn, the air enters at the lower end of the holder and ascends in globules through the column of ink to fill the space left vacant.

There are many varieties of fountain pens made in the United States, but the basic principles underlying all are practically the same, the retention of the ink by atmospheric pressure and the furnishing of a supply ready for use throughout many hours of continuous writing. In the United States alone, in ten years, 185 patents have been granted for inventions under the heading "Fountain Pen," as follows:

1893..16	1895..14	1897..15	1899..25	1901..21
1894..12	1896..16	1898..22	1900..22	1902..22

During the same period 29 patents were granted with the titles "fountain pen attachments," "fountain penholders," "fountain marking pens," etc., and several patents for "reservoir pens," and the like.

TIRES AT THE NEW YORK AUTOMOBILE SHOW.

THE tire exhibits at the fourth annual automobile show under the auspices of The Automobile Club of America and the National Association of Automobile Manufacturers, at Madison Square Garden, New York, January 16-23, shared liberally in the increased interest shown by the public in automobiles. The attendance was larger than at the previous shows, there were more exhibitors and more machines displayed, and the visitors displayed a more intelligent interest and apparently more concern about making purchases. It was agreed on all sides that the year had been one of steady improvement in details of construction, resulting in machines of greater efficiency and of more attractive appearance. The comment was general that the American automobiles, on the whole, did not suffer from comparison with the foreign exhibits, although the most celebrated makers in Europe were fully represented by their best types.

No less than the automobile makers, the rubber men had been busy during the year in seeking to perfect their product, and throughout the show it was evident that users and intending purchasers of automobiles are becoming alive to the importance of the rubber equipment of these machines. Hence the tire exhibits were visited constantly by individual automobilists, displaying no less interest than the makers of machines on the lookout for the best and latest tire features.

There was no new type of tire shown; no new shapes were apparent to the casual observer, and only one novelty in methods of tire attachment. But there was to be seen in this tire booth or that a change in contour, or a modification in weight or thickness of tire walls, or a new detail in the building up of treads—all with a view to strengthening the tires, or rendering them less liable to wear or puncture, or to afford more elasticity. And the net result of all these efforts is a distinct improvement since last year's shows in automobile tires.

The principal comment of a general nature to be made is that the detachable "clincher" tire has become the standard. Last year there were ten tire manufacturers' exhibits, only four of which embraced "clincher" tires, and in not all of these was it offered as the leading attraction. This year there were again ten manufacturers' exhibits—not counting two foreign firms—and eight of these gave prominence to the "clincher" tire, while some had nothing else to show. The ninth exhibit was devoted to detachable pneumatic tires of a special type, and the tenth to solid tires. For that matter, several displays embraced solid tires, but principally for the equipment of heavy commercial vehicles, fire apparatus, and the like, for which no pneumatic tire as yet seems adapted. The single tube tire was scarcely visible. The two foreign tire exhibits belonged to the "clincher" class.

THE EXHIBITS IN DETAIL.

THE DIAMOND RUBBER CO. (Akron, Ohio).—The feature of the exhibit was the "Diamond detachable," which is of the now predominating "clincher" type. The most distinct novelty was the rubber covered lug, described in the last INDIA RUBBER WORLD, which has been patented, and is expected to reduce by one half the troubles with inner tubes. The exhibit included two tires used by E. Tom Fetch in his "endurance run" from San Francisco to New York. In the building was the "Grey Wolf," fresh from its record breaking run at Daytona, with Diamond tires.

REPRESENTATIVES.—A. H. Marks, vice president and superintendent; W. B.

Miller, secretary. Branch managers: O. J. Woodard, New York; O. S. Tweedy, Chicago; W. M. Perrett, Detroit; W. T. Helfer, Boston; Samuel F. Randolph, Jr., Philadelphia; N. T. Oliver, Buffalo; F. E. Taylor, Cleveland. New York salesmen: G. J. Bradley, D. W. Miles, W. T. Cronin, E. A. Percy.

FIRESTONE TIRE AND RUBBER CO. (Akron, Ohio).—The Firestone side-wire solid tire, for automobiles, trucks, fire engines, and other vehicles, heavy or light. Some very heavy tires were exhibited, with illustrations of vehicles of unusual size on which such tires are in use. There were also shown specimens of worn out tires, showing that the "side wire" construction allows of the effective use of a tire until less than a third of the rubber remains.

REPRESENTATIVES.—H. S. Firestone, president; J. M. Gilbert, sales manager; W. P. Berrier, New York manager; A. J. Greene, Boston manager; F. O. Sawyer, St. Louis manager; J. L. Gibney, Philadelphia manager; W. A. Wells, salesman, New York.

FISK RUBBER CO. (Chicopee Falls, Mass.).—The detachable automobile tire described in these pages in connection with last year's automobile shows. Also, the Fisk tire vulcanizers.

REPRESENTATIVES.—H. G. Fisk, treasurer; H. T. Dunn, general manager; J. C. Cole, superintendent.

G & J TIRE CO. (Indianapolis, Indiana).—The original "G & J" tire, the first exponent of the "clincher" principle of tire construction in the United States. This tire is supplied with either corrugated or smooth tread, but it is stated that about 90 per cent. of the demand is for corrugated tires. The "wild mile" made by Henry Ford, in 39.25 seconds, on the ice of St. Clair lake, on January 12, was with the use of tires supplied by this company. Manufactured by the Indianapolis Rubber Co., which is under practically the same control.

REPRESENTATIVES.—H. O. Smith, president; J. D. Anderson, general manager; H. A. Githens, sales manager.

THE B. F. GOODRICH CO. (Akron, Ohio).—The "Goodrich clincher" tire was shown, with no change from last year's models, but with the results of the efforts of a year to strengthen the tire and otherwise improve its efficiency and wearing qualities. The side-wire solid tire was also shown, and the two wire solid tire.

REPRESENTATIVES.—Harry E. Raymond, general sales manager; A. J. Wills, manager tire department; Harry Sheldon, F. Y. Stewart, E. W. Bonham, H. B. Niblette, Frank Holcomb, New York office; J. W. Lyman, Philadelphia office; H. B. Limric, Boston office; W. O. Rutherford, Buffalo office; O. R. Cook, C. B. Tullis, general representatives.

THE GOODYEAR TIRE AND RUBBER CO. (Akron, Ohio). showed their "Akron clincher" tires with the "new construction," designed to give greater resiliency, strength and durability, the new feature relating to the building up of the tread. Also, a clincher tire with flat and corrugated tread, intended especially for rear wheels. Large endless solid tires were shown, with a special method of attachment, of which type they recently fitted a 19,000 pound truck for the Coe Brass Works (Ansonia, Connecticut) with a set, two wheels 36 inches in diameter and tires 6 inches wide, and two 42 by 7 inches, the bill for the tires being \$672.75. Another specialty of this company is a detachable pneumatic tire held in place by flanges bolted through the felly.

REPRESENTATIVES.—Charles W. Sieberling, secretary and treasurer; K. B. Harwood, manager, and C. M. Cordell, H. G. Fidler, W. D. Newarf, salesmen, New York; W. T. Teagan, manager, and George S. Atwater, salesman, Boston.

THE HARTFORD RUBBER WORKS CO. (Hartford, Conn.).—This exhibit included the principal tire novelty in the building—the new Dunlop detachable motor tire, described in the last INDIA RUBBER WORLD. Another novelty for this company is the "Hartford clincher" tire, made under the "G & J" patents.

A special form of construction of the tread is shown, to add to resiliency and durability of the tire. A third novelty was a "metallic tread," applicable to tires of whatever type. This consists of incorporating within the tread, before vulcanization, a number of steel rivets, with flattened heads, which protect the rubber from wear, in any form of tire, and especially protect pneumatic tires from puncture. The company continue to make a feature of the Turner endless solid tire.

REPRESENTATIVES.—Lewis D. Parker, president; J. W. Gilson, secretary; A. E. Friswell, assistant superintendent; Burton Parker, advertising manager; R. P. Parker, New York downtown manager; E. S. Roe, New York uptown manager; E. E. McMaster, Detroit manager; T. S. Edwards, Alexander O. Holroyd, R. C. Clunan, B. C. Severance, B. W. Snoman, Joseph Rentall, H. F. Snyder, R. H. Laporte, J. F. Coughlin, salesmen.

INDIA RUBBER CO. (New Brunswick, New Jersey).—India "G & J" automobile tires, made under license; single tube carriage and motor tires; "India" detachable automobile tires—double tube—held in place by flanges bolted to the felly; "India" endless solid motor and wagon tires; "India" side wire solid tires; "India" two-wire solid tires; tire applying machines. This is a new factory, continuing the business of the India Rubber Co. burned out at Akron last year, with the addition of the "G & J" licensed tire.

REPRESENTATIVES.—Claude Platt, Silas L. Hazel, and various representatives of the factory.

INTERNATIONAL AUTOMOBILE AND VEHICLE TIRE CO. (Milltown, New Jersey).—"International" single tube ("Fox brand"), detachable, solid, and cushion tires, for automobiles and carriages. The detachable tire is made under license from The G & J Tire Co., and is also labeled "Fox brand." The solid tires are of the ordinary two wired on type. The company also market a machine for applying solid tires.

REPRESENTATIVES.—James C. Matlock, president; Park Mathewson, general representative; H. S. De Silver and R. W. Ireland, salesmen.

MORGAN & WRIGHT (Chicago) confined their exhibit to their new product, the "Morgan & Wright clincher" tire. In section, this tire is circular, rather than oval, as in the case of a number of other manufacturers, which feature is believed to put less strain on the walls of the tire when in use. Besides, an element of elasticity has been added to the tread by the incorporation in it of several plies of fabric with layers of rubber between, with the idea that, should the wheel strike an obstruction, it will pass over with less damage to the tire. The two features here noted are pointed out as lessening the tendency of the rubber and the fabric to part company, a cause of shortening the life of tires quite as much as actual wear of the tire surfaces.

REPRESENTATIVES.—Arthur Phelps, sales manager; W. C. Marion, New York manager; J. J. Alexander, Chicago; G. S. Shugart, New York; J. C. Weston, Detroit.

THE FOREIGN TIRES.

NOT the least interesting feature of the show was the appearance for the first time in an American show of exhibits of foreign made tires, side by side with those of home manufacturers. There were two such exhibits, embracing tires which have already become known here, not only by reputation, but through their use, for several years past, on imported automobiles.

The CONTINENTAL tire was exhibited by the Continental Caoutchouc Co., No. 298 Broadway, New York, this being an American corporation formed to represent the famous Hanover tire manufacturers in this market. Special attention was called to the winning of the Gordon Bennett Cup, in last year's races, by a motor car fitted with "Continental" tires.

The MICHELIN tire was exhibited by Norris N. Mason, No. 132 West Twenty-seventh street, New York, agent in the United States for the French firm of Michelin. In the Gordon Bennett cup race were three automobiles fitted with Michelin

tires, and these finished second, third, and fourth. Twenty-five of the forty foreign automobiles in the show were equipped with Michelin tires. This exhibit included two wheels, with Michelin tires, on which a Mr. Lake, of New York, is said to have toured 4000 miles in Europe.

THE OTHER TIRES.

THE DE LASKI & THROPP CIRCULAR WOVEN TIRE CO. (Trenton, New Jersey) exhibited a tire patented by Albert de Laski, and the fabric in which is woven on a loom by the same inventor, described as the only circular loom yet perfected "for weaving a true annular cylindrical fabric for tires." The body of the tire resembles ordinary cotton fire hose, the annular feature being attained by grouping the warps of largest diameter on that side of the tube which answers for the tread, and those of the smallest diameter on the side to be used next to the rim, the warps gradually decreasing in size as they recede, on either side, from the center line of the tread portion of the fabric. The fabric portion is of one piece, practically without a seam, and claims are made of great strength, flexibility, and durability. The rubber cover is cemented on.

THE FAWKES RUBBER CO. (Denver, Colorado) exhibited the Fawkes "Indestructible Airless Tire," which has the outward appearance of a single tube pneumatic, but is fitted with a rubber core provided with a succession of chambers, to render the whole resilient. Basil S. Courtenay, manager of the New York office, was in charge, and reported a good list of sales. The tires are made by the Milwaukee Rubber Works Co. [Illustrated in THE INDIA RUBBER WORLD, July 1, 1903.]

THE B-OK TIRE CO. (Chicago) exhibited the "B-OK" tire, which, not inflated, is offered as a "strictly pneumatic tire." It consists of a core of sponge rubber, surrounded by layers of canvas and an outer cover of rubber. The sponge is claimed to serve as a vast number of small air cells, with the effect of a well inflated pneumatic tire. [Illustrated in THE INDIA RUBBER WORLD, June 1, 1903.]

THE TENNANT AUTO-TIRE CO. (Springfield, Ohio) exhibited the Tennant "puncture proof" tire. The tread is built up with strips of puncture proof fabric, besides which the air tube is protected from side punctures by cushions lying between the outer and inner tubes. [Sponge cushion feature illustrated in THE INDIA RUBBER WORLD, September 1, 1903.]

WHALEBONE RUBBER CO. (New York) exhibited a pneumatic tire made of special materials, and on special lines, to prevent puncture. When deflated this tire, it is claimed, will not collapse to the same extent as ordinary pneumatic tires of circular section, on account of its broad square tread. [Illustrated in THE INDIA RUBBER WORLD, June 1, 1902.]

THE FOSTER RUBBER CO. (Boston) exhibited a tire, the head of which is protected from slipping, and also made to wear longer, by a succession of Foster "friction plugs." This feature is capable of attachment to any type of tire. [Illustrated in THE INDIA RUBBER WORLD, November 1, 1903.]

THE STODDER TIRE CO. (New York), which had an exhibit some years ago at the cycle shows, reappeared with an automobile tire involving their special fabric, designed both for strength and for protection against punctures.

WILLIAM CORLISS & CO. (Providence, Rhode Island) made no exhibit, but announced the forthcoming Corliss "puncture proof pneumatic tire." It is promised that it can be immovably fixed to wheels by means that will not diminish its strength or durability, that it will be less cumbersome than other tires, proof against puncture and yet resilient, and, altogether, prove the first satisfactory pneumatic tire for automobiles. The tire embraces two air tubes, with steel protective plates.

RECENT RUBBER PATENTS.

THE UNITED STATES PATENT RECORD.

ISSUED DECEMBER 1, 1903.

- N**O. 745,358. Rubber tire setting machine. E. R. Lanpher, Carthage, Missouri.
- 745,393. Shoe heel. L. F. Small, Braintree, Massachusetts.
- 745,405. Paint brush [with tubular duct connected to reservoir]. E. Vegard dit Labonte, assignor to J. R. Marcotte, both of Montreal, Canada.
- 745,406. Painting and cleaning apparatus. *Same*.
- 745,421. Stopper confiner for flexible bottles. C. F. Cushing, Braintree, Massachusetts, assignor of one half to F. E. Lovejoy, Boston.
- 745,443. Detachable tire. H. E. Irwin, Galesburg, Illinois, assignor to Irwin Rubber Co., Chicago.
- 745,469. Apparatus for submarine work [formed of a series of sections having collapsible walls and a flexible waterproof outer covering]. C. Williamson, Newport News, Virginia.
- 745,477. Bottle stopper [comprising an elastic perforated disc]. J. C. Bowers, Boston, assignor of one half to George C. Bartram, Brookline, Massachusetts.
- 745,481. Self filling fountain pen. R. Conklin, assignor to the Conklin Pen Co., both of Toledo, Ohio.
- 745,553. Portable bath mat. W. E. Allen, Toledo, Ohio.
- 745,643. Packing for piston rods. M. Montgomery, assignor to Montgomery Brothers, all of Philadelphia.
- 745,685. Death determining instrument [comprising an air tube adapted to communicate with the lungs of a person]. J. E. Storms, Jr., Yonkers, New York.
- 745,785. Warming device for use by invalids. E. H. Coates, Macon, Georgia.
- 745,792. Elastic tap for soles of boots and shoes. W. C. Gorham, Rochester, New Hampshire.
- 745,793. Elastic pad for heels. *Same*.
- 745,815. Hose coupling. W. W. Gibson, Fallston, Pennsylvania.
- 745,876. Liquid dispensing vessel. G. F. Medley, Louisville, Kentucky.
- 745,878. Pneumatic tire protector. G. E. Mentel and S. N. Mentel, Springfield, Ohio.
- 745,920. Baby comforter. H. Spencer, assignor to S. Soyster, both of New York city.

Trade Mark.

- 41,547. Waterproof sheeting and fabrics. The Hospital Sheeting Co., Boston. *Essential feature*.—The figures of two storks standing in water and holding in their bills a piece of fabric. Used since January 16, 1903.

ISSUED DECEMBER 8, 1903.

- 746,006. Washer. Melville S. Brigham, Hingham, Massachusetts.
- 746,143. Method of making composition horseshoes. George J. Peacock, assignor of one fourth to Henry J. Potter, both of Pittsburgh, Pennsylvania.
- 746,207. Repair device for pneumatic tires. John R. Vosburgh, Johnstown, New York.
- 746,336. Artificial leg. James Johnston, Jamaica Plain, Massachusetts.
- 746,380. Apparatus for administering anesthetics [through either the mouth or the nose]. Frank M. Richardson and John F. Field, Chicago.
- 746,497. Coupling for armored hose. Edwin T. Greenfield, Monticello, New York.
- 746,630. Armored hose and method of making same. [A flexible hose composed of an inner tube of rubber; a surrounding tube of fabric, such as braided cotton, and an armor of interlocking metallic strips spirally disposed therearound, the inner tubes being given "set" corrugations from within which correspond to the spiral corrugations of the armor]. Edwin T. Greenfield, Monticello, New York.

ISSUED DECEMBER 15, 1903.

- 746,688. Substance resembling India-rubber [100 parts coal tar; 25 parts boracic acid; and a suitable quantity of oxygen]. Daniel H. Dupont-Franklin, New York city.
- 746,689. Method of manufacturing a substance resembling India-rubber. *Same*.
- 746,693. Vehicle wheel [with elastic tire]. Harry G. Grier, East Orange, New Jersey.
- 746,743. Combined lap robe and storm apron. Samuel D. Reid and Ella M. Reid, Burlington, Kansas.

- 746,749. Nasal medicator. George E. Seidel, Richmond, Indiana.
- 746,862. Ventilated shoe. C. H. Matson, assignor to himself and C. P. Anderson, both of Worcester, Massachusetts.
- 746,866. Perfumery atomizer. Russell W. Moore, Orange, New Jersey.
- 746,902. Vehicle wheel [covering a modification of the Dunlop tire]. Frank H. Turner, Hartford, Connecticut.
- 746,940. Collapsible part for boats, [a raft of inflatable tubes]. John Ewing, Jr., Richmond, Canada.
- 746,953. Tree spraying mechanism. Jesse C. Gill, Arnold, Ohio.
- 746,963. Clothes wringer. Frederik Hooker, Baltimore, Maryland.
- 746,976. Protecting head gear or hat. Anna Mieroslowski, New York city.
- 747,001. Pneumatic tire. Edward H. Seddon, Brooklands, England.
- 747,008. Hose coupling. Harry E. Smith, Roslyn, Washington.
- 747,025. Nursing bottle. Anna M. White, Hasbrouck Heights, New Jersey.
- 747,139. Abdominal support. Fred W. Clark, Utica, New York.
- 747,237. Elastic tire. Wilhelm W. E. Scheck, Kassel, Germany.
- 747,242. Hose coupling. F. Schuette, G. Fleischer, and W. S. Thellman, Homestead, Pennsylvania.
- 747,247. Truss pad. Isaac B. Seeley, New York city.
- 747,304. Cushion wheel and hub therefor. Roland C. Hilston, New Bedford, assignor to Louis A. Wyman, Lynn, Massachusetts.

ISSUED DECEMBER 22, 1903.

- 747,360. Hose coupling. Harry G. Barry, Pontiac, Michigan.
- 747,375. Horse collar or the like [pneumatic]. Juan E. ChiloteGuy, Buenos Ayres, Argentina.
- 747,412. Hose coupling. August H. Getz, Washington, D. C.
- 747,444. Combined syringe and applicator. Edward N. La Veine, Kansas City, Missouri.
- 747,515. Telephone or like cable. Francis Tremain, Highgate, England.
- 747,742. Anesthetic inhaler. Edwin Marshall, Warrensburg, assignor to George C. Pitcher, Kansas City, Missouri.
- 747,817. Air brake coupling. R. W. Wilke, Auburn Parke, and M. Bauer, South Englewood, Illinois.
- 747,876. Insulating wire. Henry W. Fisher, Pittsburgh, Pennsylvania, assignor to Standard Underground Cable Co.

ISSUED DECEMBER 29, 1903.

- 747,948. Fountain pen. William F. Cushman, Boston.
- 748,068. Crutch [with resilient appliance for tip]. James H. Hammond and William Bridgewater, Leicester, England.
- 748,256. Elastic tire for vehicles. Edgar M. Birdsall, Buffalo, New York, assignor to De Witt H. Bothwell, Toledo, Ohio.
- 748,382. Hose coupling. Wolfgang Koller, Pittsburgh, Pennsylvania.

Trade Marks.

- 41,736. Certain named waterproof fabrics and articles made therefrom. H. M. Sawyer & Son, Cambridge, Massachusetts. *Essential feature*.—The word "Excelsior." Used since October, 1902.
- 41,737. Elastic bands, elastic braids, and elastic webbing. A Steinhart & Bro., New York city. *Essential feature*.—The words "Gilt Edge." Used since November 2, 1895.
- 41,738. Tailors' prepared Gutta-percha tissue. Frederick Douglas Scott, Montreal, Canada. *Essential feature*.—The word "Economic." Used since September 17, 1903.
- 41,739. Certain named rubber fabrics. Tredair Rubber Co., Boston. *Essential feature*.—The word "Tredair." Used since August, 1903.
- CORRECTION.**—The trade mark "Amalac" of the Massachusetts Chemical Co. was mentioned in our last issue [page 123] as having been "used since 1903." The date should have been printed 1893.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

THE BRITISH PATENT RECORD.

[* Denotes Applications from the United States.]

PATENTS APPLIED FOR—1903.

- 24,689. A. B. Drummond, London. Nonslipping tire. Nov. 13.
- 24,876. T. Brown, Sheffield. Revolving heel pad. Nov. 16.
- 24,890. J. Cockburn, London. Pneumatic tire for vehicles. Nov. 16.
- 24,994. Rose Basch and S. Basch, London. Elastic tire. Nov. 17.
- 25,034. R. Gough, London. Ventilation of mackintoshes. Nov. 17.
- 25,085. R. Wallwork and C. H. Wallwork, Manchester. Protective cover for tires. Nov. 18.

- 25,107. A. T. Sadler and A. Franklin, Birmingham. Repair band for pneumatic tires. Nov. 18.
- 25,220. W. F. Williams, London. Means of securing elastic tires. Nov. 19.
- 25,250. Henrich Traun, London. Improved manufacture of combs and other objects in vulcanized India-rubber. (Communicated from Germany). Nov. 19.
- 25,274. E. Lapisse, London. Pneumatic tire for vehicle wheels. Nov. 19.
- 25,299. F. H. Barker, Manchester. Rubber heel for boots. Nov. 20.
- 25,357. J. Esmonde, London. Tire for wheels and rim for same. Nov. 20.
- 25,373. G. E. Wells, London. Manufacture of golf balls. Nov. 20.
- 25,406. T. Singleton and G. W. Singleton, Halifax. Revolving heel. Nov. 21.
- 25,408. F. S. Beilby, Manchester. Cover for pneumatic tires. Nov. 21.
- 25,418. J. M. Macrae, London. Hot water bag. Nov. 21.
- 25,428. J. Fisher, Manchester. Golf ball. Nov. 21.
- 25,432. Higham and J. Rickard, Plymouth. "Higham" inner tube for cycle and motor tires. Nov. 21.
- 25,572. E. Midgley, London. Pneumatic tire cover. Nov. 23.
- 25,598. F. F. Kerr, Liverpool. Pneumatic tire. Nov. 24.
- 25,631. H. E. Kitcat, London. Hose coupling. Nov. 24.
- 25,645. A. J. W. Curry, London. Means for repairing pneumatic tires. Nov. 24.
- 25,656. L. Nioré, Liverpool. Pneumatic tire protector. Nov. 24.
- 25,728. J. A. Torrens, Somerset Coleraine. Cover for pneumatic tires to prevent side slipping. Nov. 25.
- 25,973. The Eastern Produce and Estates Co., Limited, 115, Cannon street, London. Implement for "tapping" rubber trees. (T. P. Simpson, Ceylon.) Nov. 27.
- 25,001. A. Subron, Hull. Device for repairing pneumatic tires. Nov. 28.
- 26,109. W. Macaulay, Lorne, county Antrim. Pneumatic cushion, with air valve. Nov. 30.
- 26,110. J. Thomas, and W. Smith, Roath, Cardiff. Rubber and leather heel. Nov. 30.
- 26,133. C. Andresvert, London. Apparatus for applying pneumatic tires. Nov. 30.
- 26,134. P. J. McGinn, Bulawayo, Rhodesia. Self acting pump for inflating tires on wheels while the same are in motion. Nov. 30.
- 26,202. E. W. Wooders, Birmingham. Washers for revolving heel pads for boots. Dec. 1.
- 26,308. E. J. Price and T. Carey, Cardiff. Combination cushion heel piece, for boots. Dec. 2.
- 26,321. F. W. Rushbrooke and F. B. Tippets, London. Pneumatic tire for motor cycles and motor cars. Dec. 2.
- 26,374. J. C. N. Fomeloy, London. Pneumatic tire. Dec. 2.
- 26,469. M. Vivian, London. Elastic tire for vehicles. Dec. 3.
- 26,474. A. F. Allan and J. A. Lenhoff, London. Air brake hose coupling. Dec. 3.
- 26,519. P. A. Martin and D. A. Martin, Birmingham. Method of and means for applying covers to elastic tires. Dec. 4.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 2, 1903.]

- * 17,060. (1902). Interlocking tile of rubber, for floors, walls, and ceilings. G. H. Bennett, New York.
- 17,061 (1902). Device for closing punctures in air tubes of tires. Turcat, Mery et Cie., Marseilles, France.
- * 17,144 (1902). Golf ball [with center formed by winding a strip of rubber, instead of a core of hard material, the cover being made of Gutta-percha]. E. Kempshall, Boston.
- * 17,181 (1902). Golf ball [formed by winding a strip of rubber over a celluloid core and enclosing the whole in a Gutta-percha covering]. E. Kempshall, Boston.
- 17,211 (1902). Pneumatic tire [involving means of attachment for increasing the lateral stability of the tire cover]. L. Johnstone, Blackley, near Manchester.
- 17,301 (1902). Golf ball [of alternate strips of India-rubber and Gutta-percha, with or without a central core, and enclosed in a Gutta-percha casing]. C. T. Kingzett, Chiselhurst.
- 17,393 (1902). Pneumatic tire [relates to the attachment of the thickened edges of the tire to rims with inturned edges]. H. Falconnet and M. Perodeau, Choisy-le-Roi, France.
- 17,586 (1902). Horseshoe pad. H. Walker and P. S. Walker, New Charlton, and J. Hamer, Plumstead, both in Kent.

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 9, 1903.]

- 17,637 (1902). Vulcanizing rubber boots and shoes. A. Cockburn, Edinburgh.
- 17,638 (1902). Molding water bottles and other goods of rubber. J. Cockburn, Edinburgh.
- * 17,734 (1902). Pneumatic tire [depending for resiliency on compressed gas enclosed in sponge rubber]. R. Haddan, London. (R. A. Kent, Joplin, Missouri.)
- 17,787 (1902). Pneumatic tire for vehicles. F. Toni, London.
- 17,811 (1902). Electric insulator [for high tension currents; formed of porcelain, and mounted on a stem of vulcanite secured in brackets fixed to the post]. K. S. Lemström, Helsingfors, Finland.
- * 17,917 (1902). Boot heel of leather and rubber. L. F. Small, Braintree, Massachusetts.
- 17,990 (1902). Stopper for milk bottles [involving a rubber cap]. N. M. C. Dupond, Besançon, France.
- 18,012 (1902). Pneumatic tire [rendered puncture proof by a strip of leather within the outer cover]. W. Saunders, Lochwinnoch, Renfrewshire.
- 18,134 (1902). Golf club [with resilient driving face]. C. H. Gray, India-Rubber, Gutta-Percha, and Telegraph Works Co., Limited, Silvertown.
- 18,135 (1902). Rubber coated thread of cord [designed for weaving the Palmer tire cover, described in THE INDIA RUBBER WORLD, January 1, 1904—page 131]. C. H. Gray, Silvertown, and T. Sloper, Devizes, Wiltshire.
- [ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 16, 1903.]
- 18,198 (1902). Bottle stopper [including a rubber ring]. B. W. Glass, Belfast, New Zealand.
- * 18,505 (1902). Playing ball [for golf and the like; formed with an inflated center piece, wound with rubber thread under tension, and the whole enclosed in a shell of Gutta-percha]. E. Kempshall, Boston.
- 18,518 (1902). Pneumatic hub for vehicle wheels. W. H. Ireland, Birmingham.
- * 18,547 (1902). Cushion tire [formed in sections separately secured to the wheel rim]. G. Miller, Binghamton, New York.
- * 18,583 (1902). Golf ball. E. Kempshall, Boston.
- * 18,589 (1902). Golf ball. E. Kempshall, Boston.
- 18,595 (1902). Cushion tire [made in sections and secured separately to the wheel rim]. W. H. Sewell, Bangor, Ireland.
- 18,600 (1902). Bottle stopper [including a flat rubber washer]. R. Hill, Grimsby.

THE GERMAN PATENT RECORD.

PATENTS GRANTED.

- 148,266 (Class 63d). Appliance for setting rubber tires in the fellos. P. Uhlig, Dresden. Dec. 9.
- 148,508 (Cl. 28b). Rubber cover, for the work table of leather working machines. Baugh Machine Co., G. m. b. H., Frankfurt a/M. Dec. 16.
- DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].
- 212,374 (Class 77f). Rubber bag connected with trumpet of edible material, with metal vibrating tongue attached. Frau Ernst, Oelbenna. Dec. 2.
- 212,729 (Cl. 12f). Siphon of soft rubber provided with dependent rubber ball. A. Kahlert, Hamburg. Dec. 9.
- 205,499 (Cl. 77f). Toy in form of closed rubber cylinder divided in the middle by a diaphragm in which are inserted musical reeds. Ungarishe-Gummiwaaren-Fabrik, A.-G., Budapest. Dec. 2.

PATENTS APPLIED FOR.

- 8,410 (Class 39b). Process for devulcanizing Caoutchouc. (Addition to patent No. 112,017.) A. E. J. V. J. Theilgaard, Copenhagen. Dec. 2.
- 8,194 (Cl. 39d). Process for rendering harmless the cellulose in Caoutchouc, Gutta percha and the like. Same. Dec. 9.
- 8,581 (Cl. 39a). Process for manufacture of hollow rubber goods. Dr. Heinrich Traun u. Söhne, Hamburg. Dec. 2.
- 17,517 (Cl. 39a). Protective covering for use in the cold vulcanization of rubber goods. E. Frankenberg, Hanover. Dec. 9.
- 20,742 (Cl. 39a). Process for manufacture of rubber pumps. (Addition to patent No. 141,210.) Schlesische Gummiwaaren-Fabriken, Gustave Eichler, Bresslau. Dec. 9.
- 10,684 (Cl. 39b). Process for regenerating Caoutchouc. P. H. J. Chautard and Henri Kessler, Paris. Dec. 9.
- 8,574 (Cl. 21c). Protective covering for electric cables. Dr. Heinrich Traun u. Söhne, Hamburg. Dec. 5.

THE RUBBER SHOE JOBBERS WILL MAINTAIN PRICES.

THE sixth annual meeting of the Western Association of Shoe Wholesalers was held in St. Louis on January 5 and 6, including a banquet on the evening of the first day, tendered by the St. Louis Shoe Manufacturers' and Jobbers' Association, which was attended by about 150 wholesalers and guests. The officers were unanimously reelected, as follows: Orlando C. Smith, of Chicago, president; George W. Freeman, of St. Paul, first vice president; S. W. Campbell, of Chicago, secretary, and an executive committee consisting of representatives of important jobbing houses in eleven cities. The business meetings were devoted principally to arriving at an agreement on rubber shoe prices for the current year. At the banquet the toastmaster was Erskine M. Phelps, of Chicago. President Smith, in his address, told the story of the beginnings of the association, which grew out of the determination of a few jobbers in Chicago to do what they could to discourage price cutting on rubbers. To-day the association has nearly a hundred members and covers the western states and the northwest, and out of it have sprung several other associations, in New England and elsewhere, and as a result of the whole a National association has been organized, the next meeting of which is to be held in Boston in February. An address was made by the Hon. David R. Francis, ex-governor of Missouri, and president of the World's Fair commission at St. Louis, who mentioned that his first employment was in the shoe store of an uncle in his native town in Kentucky. Addresses were made also by representatives of the New England, Middle States, and Southern shoe jobbers' associations. This was the first meeting of the association outside of Chicago, and the members were enthusiastic over the character of their entertainment at the hands of the St. Louis trade. The chairman of the committee on entertainment at St. Louis was George W. Perry, of the George W. Perry Rubber Co., of that city. Before leaving the city the visitors were taken through the World's Fair grounds, where they were photographed in a group.

The sentiment of the jobbers assembled at St. Louis was decidedly in favor of keeping up the standard of prices for the year 1904. Since the United States Rubber Co. have discontinued the practice of fixing the prices at which the jobbers shall sell rubber boots and shoes to the retailers, the jobbers through their associations have taken up the matter. The adoption of the resolution fixing the minimum price was practically unanimous—being adopted with a single dissenting vote—and was for the entire year, unless otherwise ordered by the executive committee, which has power, if the necessity arrives, to make proper price reductions. There will, however, be no indiscriminate price cutting, unless some members of the Association break faith, which is not at all regarded probable. The resolution adopted is as follows:

Be it Resolved, by the Western Association of Shoe Wholesalers, in convention assembled this fifth day of January, 1904.—That each member present does hereby agree and pledge himself and his house that he will sell rubber boots and shoes of any brand, either United States Rubber Company's or others, at a profit to ourselves of not less than— and — per cent., and that there shall be retained a profit of not less than — and — per cent. on the advanced cost of the goods on hand June 1. That we pledge ourselves to do this for the entire year 1904, or until further instructions are received from the executive committee of this Association, and that we will not deviate directly or indirectly from this.

[NOTE.—The rates of discount mentioned in the resolution, having been agreed to in executive session, are held in reserve here for reference to the wishes of members of the association.]

Included in the attendance, besides leading jobbers, were the following representatives of the rubber shoe trade:

Charles B. Allen, Chicago manager of the United States Rubber Co. and Boston Rubber Shoe Co.

George S. Miller, general sales agent, Joseph Banigan Rubber Co., Chicago.

Eben H. Paine, sales manager, United States Rubber Co., New York.

Charles A. Coe, selling agent, United States Rubber Co., Boston.

W. H. Jones, selling agent, United States Rubber Co., Baltimore.

F. F. Shaffer, superintendent Goodyear's India Rubber Glove Manufacturing Co., Naugatuck, Conn.

E. I. Aldrich, selling agent, Hood Rubber Co., Boston.

A. F. Solberg, selling agent, Boston Rubber Shoe Co., Boston.

Chester J. Pike, selling agent, Hood Rubber Co., Boston.

E. R. Rice, manager of branch stores, United States Rubber Co., New York.

J. E. Coulter, selling agent, Grand Rapids Felt Boot Co., Grand Rapids, Michigan.

A. D. Warner, superintendent, Beacon Falls Rubber Shoe Co., Beacon Falls.

E. G. Studley, Grand Rapids Felt Boot Co., Grand Rapids, Mich.

BY OUR CHICAGO CORRESPONDENT.

THE members of the Chicago rubber trade who attended the convention of the Western Association of Shoe Wholesalers at St. Louis, on January 5 and 6, express themselves as well pleased with the success of the attempt that has been made to guard against price cutting. The rules and agreements which were in force last year were continued for another year. There has been some disregard for the agreements on the part of individuals. Those in attendance, however, declare the present system is far ahead of the old method of contracts with a restriction clause, between the manufacturer and the jobber.

There was less cutting last year, according to all reports, than during the previous year. While the association does not include anywhere near all the jobbers in its territory, it has accomplished a great deal in bringing about a uniform price on rubber goods for the protection of all concerned, and to secure to each a fair profit.

But the question of uniformity of prices is not the only matter in the interest of the trade with which the association has concerned itself. Another thing that is being urged is a classification of shoes as second class freight, instead of first class, without the necessity of extra expense in packing.

Chicago again captured the presidency and secretaryship, and the headquarters of the association will remain in this city another year as a consequence. President O. C. Smith, of the Smith-Wallace Shoe Co., who has held the position of chief executive of the association for five years, was reelected. S. W. Campbell, of Chicago, who has held the position of secretary for five years was reelected, while George W. Freeman, of St. Paul, was elected first vice president. The association has had but two presidents since its organization, K. L. Barton, of Kansas City, being the first, and Mr. Smith the second.

At the banquet in St. Louis, President Smith said, in his annual address: "One subject that has been discussed at this session is the classification of freights. We think that shoes should not be charged the highest possible freight rate, as first class freight, but should be classified as second class. The railroads offer to so classify shoes, but insist upon our strapping the cases, thus adding a heavy expense to the packing item. Another subject is the practice of dating ahead many bills. There

should be some rule governing this. We formerly got from 10 to 15 per cent. more than we do to-day, but in some cases the old dating method is in use."

BY OUR NEW YORK REPORTER.

EXPRESSIONS by many of jobbers gathered at St. Louis indicated that the demand for rubber boots and shoes during the season has been larger than ever before, and it was also the general opinion that the stocks now in retailers' hands are small. Throughout the northwest, especially, the demand seems to be steadily increasing, and opinions differ as to whether this is principally on account of the increase in population, or whether there is a more general use of rubber shoes.

In speaking of this growth of demand, Mr. Eben H. Paine, of the United States Rubber Co., said: "Our business for 1903 was not only the largest since the organization of the company, but was about 30 per cent. greater than for any other year. The demand for rubber footwear has been steadily on the increase. This is true in regard to both boots and shoes, although in New York and its vicinity the demand for boots seems to outrun in growth the demand for shoes. This is probably because of the increased efficiency of the street cleaning department, and the amount of public work going on which requires extra protection. Although crude rubber was high at certain periods last year, the profits on the goods sold averaged fully as large as usual. I do not know anything definite about the stocks in hand in the country, but from the reports received we are rather inclined to believe that they are light. Inquiries since the first of the year have been good and this indicates that stocks are low, because January and February are our dullest months as a rule, since the dealer who is not entirely out of stock prefers to wait until later before buying."

Mr. William Morse, president of the Merchants Rubber Co. (New York), said in regard to the rubber footwear trade: "Our business for last year was by large odds the most satisfactory we have ever known, not only in rubber boots and shoes but also in rubber clothing. This is especially true with regard to overcoats. Since the first of the year our orders have been at least 20 per cent. larger than last season. This certainly seems like a good beginning for the coming year. There is no doubt that rubber clothing is growing in popularity and there seems to be a steady but unending growth in the demand for footwear. The price of rubber doesn't make any difference to us. That's the manufacturer's lookout."

RICHARD BUTLER SCHOLARSHIP.

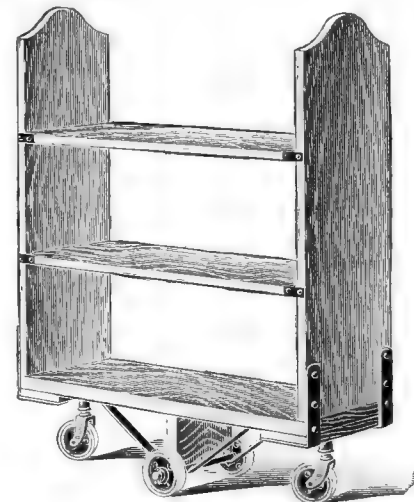
THE trustees of Columbia University, New York, have established the Richard Butler scholarship, open to competition to men students born in the state of Ohio. The holder of the scholarship may at his option enter Columbia College, or may study under any one of the graduate schools of philosophy, political science, and pure science, or one of the professional schools of law, medicine, applied science, and architecture. His appointment shall be for one year only, but may be renewed for reasons of weight for two additional years. The scholarship was endowed in memory of Richard Butler, by his widow. He was born in Birmingham, Ohio, in 1831; he came to New York as a boy and became successful as a merchant, and later in the manufacture of hard rubber. He was president of the Butler Hard Rubber Co. until its merger with the American Hard Rubber Co., and afterwards a director in the latter. Mr. Butler was one of the founders, and for many years a trustee, of the Metropolitan Museum of Art. He was a member of the New York Chamber of Commerce, and a chevalier of the Legion of Honor.

RUBBERED WHEELS FOR TRUCKS.

THE use of rubber on the wheels of trucks must be very considerable, judging from the great number and variety of these articles employed in the handling of merchandise wherever modern business conditions obtain. In stores and warehouses of whatever type, trucks are employed in the removal of goods—trucks of two, or three, or four wheels, and often made, as to size, shape, and strength, so to adapt them particularly to the kind of goods to be handled. There are trucks for heavy or light dry goods, for groceries, paper, books, seeds, metals, raw cotton, and so on through the list of merchantable wares. There are specially made trucks for the

transfer of books from one portion of a library to another. There are special trucks for post-office use, for hotel baggage, for banks—dozens and scores and hundreds of trucks; of plain or handsome finish; all at prices to correspond. There is nothing new about the use of trucks, but there has been a steady increase in the demand for rubber tired wheels for these devices

(1) to protect floors, (2) to render the use of the trucks easier, or (3) for the avoidance of noise.



LIBRARY TRUCK.

With Vulcanized Rubbered Wheels, 5x1 $\frac{1}{4}$ inches.
[Made by The Fairbanks Co., New York.]

Rubber bands are not adapted to the wheels of all trucks, of course; there are "hot metal trucks," for instance, used in tinsplate mills and in other situations where a wooden truck would not serve. But in a great variety of situations the rubber band is desirable and has come into use. It is interesting to notice in the catalogue of a single manufacturer of trucks, no fewer than 230 priced items of "rubbered" wheels, the choice being offered to the purchaser of wheels with or without rubber. There are single wheels listed as large as 16 inches in diameter and 4 inches face, and in price as high as \$12.75—subject, of course, to discount.

Unlike most applications of rubber, the rubbered truck wheel does not seem to have profited any inventor or patentee. In THE INDIA RUBBER WORLD of May 1, 1902 (page 250) appeared a contribution from Mr. Henry W. Kellogg, reporting the first use of rubber bands on truck wheels, to his knowledge. In 1865, while he was laying the marble floor of the New York Stock Exchange—the building that was replaced last year—it occurred to him that some means could be found to prevent the damage done to the floor by iron truck wheels running over it. He made a sketch, therefore, of a wheel with a rubber band, which he submitted to the merchant prince, Alexander T. Stewart, who was interested in the building of the Exchange, and the idea was at once adopted. The only idea then was to bridge over a single difficulty, and it occurred to no one to apply for a patent.

REPORTS have reached Akron that Mr. H. C. Corson, formerly of The B. F. Goodrich Co., and who is in Paris, under treatment for snow blindness, is improving. He recently sent check for \$100 to the poor department of Akron—an annual donation which he always made while living here.

AMERICAN CONSUMPTION OF INDIA-RUBBER IN 1903.

THE past year was an exceptional one in the rubber industry, as has already been pointed out in these columns. As will appear from the table at the bottom of this page the imports of crude India-rubber into the United States during 1903 exceeded by more than 1500 tons the largest figures for any previous year, being just 50 per cent. greater than the imports 10 years ago. It may be mentioned, by the way, that the figures herewith, although compiled by private statisticians in the trade, compare very closely with the custom house statistics of arrivals. Not only were the receipts exceptionally large, but the deliveries for consumption were correspondingly great, leaving the stocks smaller at the end than at the beginning of the year. On December 31, the stocks here were, according to this table, 256 tons, of rubber of all kinds, whereas the average stocks for ten years previous had been 861 tons. These figures, by the way, do not include Gutta-percha, Balata, or the cheaper East Indian gums. The record of consumption relates to Canada as well as the United States, since the greater part of the requirements of rubber manufacturers in the Dominion are imported via New York.

From the same source is obtained the following comparative statement of prices of fine Pará rubber in New York and Liverpool, for ten years past:

YEARS.	New York	Liverpool.
1894.....	64½ @ 73	2.9 @ 3.1
1895.....	70 @ 81½	3.0½ @ 3.4½
1896.....	71 @ 85	3.0½ @ 3.8½
1897.....	79½ @ 89	3.5 @ 3.9
1898.....	82 @ 1.06	3.7½ @ 4.5
1899.....	91 @ 1.10	3.10 @ 4.7½
1900.....	83 @ 1.11½	3.8½ @ 4.9
1901.....	76 @ 95	3.4 @ 3.11½
1902.....	66 @ 92	2.10 @ 3.0½
1903.....	78 @ 1.13	3.6½ @ 4.8

The next table analyzes the imports of crude rubber into the United States by grades, the figures denoting tons:

YEARS.	Fine Pará	Coarse Pará.	*Centrals.	African and E. I.	Total.
1897..	7,556	2,935	2,404	4,770	17,671
1898..	6,804	2,935	3,603	5,878	18,620
1899..	8,622	3,876	3,440	7,157	23,095
1900..	8,079	3,906	3,020	5,463	20,468
1901..	9,304	3,838	2,927	7,139	23,208
1902..	8,666	4,235	2,588	6,353	21,842
1903..	9,325	4,609	3,040	7,786	24,760

[* Including Caucho and Pernambuco.]

The percentage of the various grades in the imports into the United States were as follows:

	1902	1903
Pará fine.....	39.64	37.63
Pará coarse.....	19.40	18.63
Centrals, Caucho, and Pernambuco.....	11.86	12.29
African.....	29.10	31.45

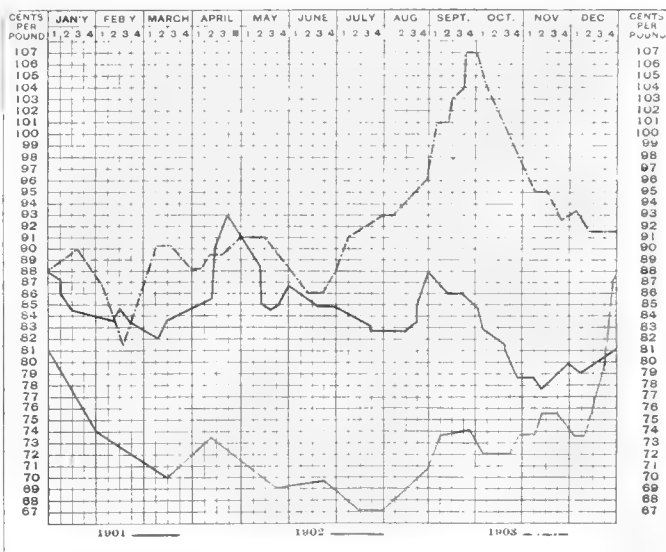
The percentage of fine Pará in the imports of previous years was as follows: 39.64% in 1902; 40% in 1901; 39½% in 1900; 37¼% in 1899; 36½% in 1898; 43¼% in 1897; 45½% in 1896; 44% in 1895; 46¾% in 1894; 44¼% in 1893.

The figures in the next table, showing the extent of the world's visible supplies of rubber on January 1, 1904, have been derived from the Messrs. Morse's tables, though they are given on this page in pounds instead of tons, in order that they may be compared readily with former tables:

	Pounds.
Stocks in the United States.....	573,440
Pará grades.....	14,500
Central American and Caucho.....	17,200
African and East Indian.....	4,050
Stocks in Europe.....	4,724,160
Pará grades.....	13,200
All other.....	13,200
Stocks Pará grades at Pará and afloat.....	6,025,600
Total.....	11,323,200
Total, January 1, 1903.....	12,221,440
Total, January 1, 1902.....	13,221,160
Total, January 1, 1901.....	13,017,300
Total, January 1, 1900.....	12,281,400
Total, January 1, 1899.....	10,215,440
Total, January 1, 1898.....	7,400,900
Total, January 1, 1897.....	10,171,600

RUBBER PRICES FOR THREE YEARS.

DIAGRAM showing fluctuations in spot prices at New York of Islands, Pará fine rubber during 1901, 1902, and 1903 [copyrighted 1904 by Henry A. Gould.]



[The topmost line indicates the course of prices in 1903, the middle line 1901, and the lowest line the range for 1902.]

CONSUMPTION OF INDIA-RUBBER BY THE UNITED STATES AND CANADA (IN TONS).

[From the Annual Statistical Summary of ALBERT T. MORSE & Co., brokers, New York.]

DETAILS.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.
Imports to United States.....	12,942	14,263	16,152	15,347	16,420	14,643	16,182	14,333	17,671	18,620	23,095	20,468	23,208	21,842	24,760
Exports to Europe.....	116	231	982	491	714	391	324	500	250	150	300	450	680	430	490
Net Imports.....	12,826	14,032	15,170	14,856	15,706	14,252	15,858	13,833	17,421	18,470	22,795	20,018	22,528	21,412	24,270
Add Stock January 1.....	1,609	746	1,260	1,086	1,217	1,037	1,420	558	641	744	591	712	1,198	1,399	331
Aggregating.....	14,435	14,778	16,430	15,942	16,923	15,289	17,278	14,391	18,062	19,214	23,386	20,730	23,726	22,811	24,601
Less Stock end of year.....	746	1,260	1,086	1,217	1,037	1,420	558	641	744	541	712	1,198	1,399	331	256
Deliveries to Manufacturers.....	13,689	13,518	15,344	14,725	15,886	13,869	16,720	13,750	17,318	18,673	22,674	19,532	22,327	22,480	24,345

RUBBER PLANTING INTERESTS.

THE ISTHMUS RUBBER CO. OF UBERO.

[Plantation near Ubero, state of Oaxaca, Mexico. Offices: No. 2, Broadway, New York.]

AT a special meeting of the shareholders, at the office of the company, on January 15, the following directors were elected: J. Oliver Stokes, Edgar B. Bronson, W. I. Overstreet, James C. McCoy, James Harold Warner, Francis H. Ross—all of New York; William D. Owen and E. E. Silver, Boston; Jonathan H. Blackwell, Trenton, N. J.; H. H. Ward, Wilmington, Del.; Bertis McCormick, Terre Haute, Ind.; Alfred A. Pocock, Hartford, Conn.; Caleb B. Leach, Middletown, Conn.; and Joseph E. Nute, Fall River, Mass. It was resolved to modify the contract with the company engaged in developing the plantation so to plant, during the time covered by that contract, an acreage of rubber and citrus fruit trees equal to and instead of the number of acres originally intended to be planted in coffee, pineapples, and sugar cane. The secretary's reports gave in detail the number of shares outstanding, showing a large increase in the monthly income of the company, and also a favorable statement from the general manager, Mr. Frank H. Ross, of the progress on the plantation. The experimental planting of rice had proved so satisfactory that a large amount would be planted during this year as a profitable quick crop.

LA ZACUALPA RUBBER PLANTATION CO.

[Plantation "La Zacualpa," near Tapachula, Soconusco district, state of Chiapas, Mexico. Offices: No. 713 Market street, San Francisco.]

THE recently published report on "The Culture of the Central American Rubber Tree," by Mr. O. F. Cook, of the United States department of agriculture, having contained a number of references to "La Zacualpa" rubber plantation, in Mexico, these sections have been reprinted by the company in a pamphlet entitled "The Success of La Zacualpa Rubber Plantation," together with reproductions of a dozen photographs, taken on that property, which figure in the government report. The whole is accompanied by notes by Mr. O. H. Harrison, resident director of the plantation, at Tapachula, pointing out in what respects the choice of location, character of soil and climate, method of planting, etc., on "La Zacualpa" are in accordance with Mr. Cook's suggestions as to the best practice, based upon his observations in the land of the *Castilloa* rubber tree.

JOLIET TROPICAL PLANTATION CO.

[Plantation "Joliet," Tierra Blanco, state of Vera Cruz, Mexico. Office: Joliet, Illinois. See THE INDIA RUBBER WORLD, September 1, 1903—page 426.]

THE first annual inspection report, by the Rev. D. T. Robertson, the stockholders' inspector, dated December 11, 1903, has appeared in a pamphlet, together with other details for the stockholders. It mentions the planting of 30,000 rubber trees to date; the second crop of corn growing; additions to the number of cattle, with good prospects of profits from grazing; and progress in clearing, fencing, and the erection of permanent buildings. For several months past no effort has been made to sell additional shares, for the reason that the present monthly income suffices for the development work and to take care of maturing payments on the land. Mr. Robertson visited several neighboring rubber plantations, some of several years standing, and the managers of which have been free in putting the results of their experience at the disposal of the "Joliet," and after seeing the progress made on the older estates, he is confident of ultimate success. He writes: "I am satisfied that we have a good prospect in rubber. I do not, however, expect results from rubber in less than 8 years, and would rather place the date at 10. Let this discourage none of our shareholders, for we should

be receiving good returns from our money long before that time from cattle and side crops."

LA NUEVA PROVIDENCIA RUBBER CO.

[Plantation "La Nueva Providencia," department of Escuintla, Guatemala. Office: Providence, Rhode Island.]

AT the annual meeting, on January 13, the officers were re-elected: Edwin H. Snow, president; Leo F. Nadeau, secretary and treasurer; Clyde E. Gardner, general manager. The company was incorporated January 8, 1903, for the purpose of growing rubber on an estate of 2000 acres, which it owns in Guatemala. The secretary reported that 45 000 rubber trees had been planted, of which 20,000 were about 18 months old and the remainder 6 to 8 months old.

RUBBER PLANTING IN KAMERUN (WEST AFRICA.)

UNDER the name Kautschuk-Pflanzung "Meanja" Actiengesellschaft, a plantation company was formed in Berlin on November 17, with a branch at Victoria (Kamerun). The capital is 1,000,000 marks [= \$238,000]. The object of the company is to take over the Meanja Plantation, Limited, and cultivate with *Kichxia elastica*. The board of officers consists of Dr. Esser, Berlin, president; Dr. jur. Herman Hösch, Düren, vice president; Dr. jur. Alb. Ahn, Cologne, and three Berlin gentlemen. Herr Max Zitzow, Berlin, is director and the management in Kamerun is attended to by plantation director, Leo Treichel. It is pleasing to note, says the *Gummi-Zeitung*, that after a somewhat long pause capital is again reverting to the Kamerun plantations. The following Kamerun plantation companies have increased their capital during 1903: West Afrikanische Pflanzungs-Gesellschaft "Victoria," by 500,000 marks; Lisoka, Molyko, and Bolifamba plantations each by 100,000 marks; so that on the whole the working capital on the Kamerun mountains has been increased during 1903 by 1,800,000 marks [= \$428,000.]

THE NEW CEYLON RUBBER PLANTING COMPANIES.

THE prospectus of the Seremban Estate Rubber Co., Limited, mentioned in the last INDIA RUBBER WORLD as having been formed in Ceylon to acquire a plantation in the Federated Malay States, was issued October 10, 1903. Of the authorized capital of 1,000,000 rupees, an initial issue was made of 475,000 rupees [= \$154,106], in addition to the shares issued to the vendors, and *The Tropical Agriculturist* states that this amount was well oversubscribed before the application list had been open three days. The company has been floated entirely with Ceylon capital, though the estate is in another colony. Our contemporary says: "This is practically the first rubber company of its kind, and will no doubt form a basis on which many other companies may come out."

Regarding The Golconda Estate Rubber Co., Limited, also mentioned last month as being formed in Ceylon to acquire a plantation in the Malay states, *The Tropical Agriculturist* mentions that already there are 100 acres on the premises planted to Pará rubber and cocoanuts.

SOUTHERN PROVINCE CEYLON TEA AND RUBBER CO., LTD.

THE articles of association of this company were gazetted December 11. The objects are to acquire the Mawinadola and Ginidomine estates of the Udugama Tea and Timber Co. (in liquidation), including tea factory and machinery. The original capital is 1,000,000 rupees [= \$327,673]. The registered office is at Colombo.

RUBBER PLANTING COMPANY PUBLICATIONS.

LA Zacualpa Rubber Plantation Co., San Francisco.—(1) The Success of La Zacualpa Rubber Plantation [with extracts from the report of Orator F. Cook, of the United States department of agriculture]. 32 pages. (2) Report of O. H. Harrison, resident director at Tapachula. 8 pages.

THE RUBBER TRADE IN CHICAGO.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: This has been an exceptional winter in Chicago, and as a result the rubber trade in more than one branch is in a satisfactory frame of mind. The rubber shoe trade has been especially benefited. While the Chicago local trade in rubber footwear has been heavy, the trade has also been good in the western and northwestern territory supplied from Chicago, though the really heavy snowfall has been confined to this city and its vicinity, extending only a few miles west and south. The weather, however, has been sufficient to make the demand for rubber footwear so great that the manufacturers' agents in this city have had their hands full in supplying the jobbers, and they in getting the goods into the hands of the hundreds or thousands of retailers.

The demand for light rubbers in Chicago has been unprecedented, for the early part of the winter. This, of course, is directly traceable to the weather. Usually Chicago is without a really heavy snowstorm until the latter part of winter, and this year the snow was at least five weeks ahead of schedule time. The snow came unannounced by the weather bureau, and blocked city and suburban traffic and transportation lines. It compelled thousands of people accustomed to use the surface lines of cars to walk to the elevated lines of cars, and the result was a perfect rush to the stores for rubber shoes. The retailers were unprepared for such a demand, and their stocks were soon depleted. This was especially true in the big department stores, which have an immense trade in the lighter grades of rubber footwear. As a result of such demand, the jobbers were importuned to rush the work of filling orders.

In this connection the statement of Mr. Charles B. Allen, Chicago selling agent of the United States Rubber Co. and the Boston Rubber Shoe Co., is of interest. Mr. Allen estimates that the jobbers in Chicago handle between \$4,000,000 and \$5,000,000 worth of rubber footwear each year. Of this amount fully \$500,000 reaches the consumer through the big mail order houses and the department stores, the latter distributing it to the local consumers, while the mail order houses supply consumers all over a number of adjacent states.

"We simply cannot supply the demand for the lighter grades of rubber shoes," said Mr. Allen. "Our Chicago trade is always large, and it is increased greatly in a season like this because we are the only manufacturers maintaining an emergency stock here from which to supply jobbers, making Chicago a distributing center. This general trade has been augmented considerably by the local demand on the jobbers for rubbers as a result of the heavy snowfalls early in December, which has been added to by more recent storms. This snow is confined almost entirely to Chicago and its vicinity, and hence the trade from the west, north, and south must be attributed to other causes. Later storms may have an exhilarating effect on the demand for rubber footwear.

"Last year we had a good winter, December showing the argest single month's business we have ever had in this line. The fall of 1902 was unusually good. The spring of 1903 was favorable, and then the floods came. It rained more or less all through the summer. As a result the country dealers found their stock at the close of their spring business depleted. It is doubtful if their stock has been cleaner and lighter in many years than it was at the close of the last season.

"Hence, when the country retailer came to stock up again he ordered in larger quantities than usual, and the jobbers'

orders were correspondingly heavier. This has made the mills busier than they have ever been. They could not begin to supply the demand. Because of our emergency stock here we have been better equipped to care for the rush orders. We carry from thirteen to fifteen brands of footwear here, and this is important to every western jobber handling rubber shoes.

"In regard to the local trade proper, all I can say is that the jobbers are almost too busy to talk. The number of small dealers indicates the volume of business done in Chicago during a snowstorm, and immediately following. I will give you an experience I had thirteen years ago, when I first came here. I thought it wise to send circulars to the various retail shoe dealers. I got the list and found there were between 2000 and 3000 dealers in Chicago who handled rubber shoes. They have multiplied rapidly since then, and in addition the big department stores have grown, so you can get an idea of what it means to supply all these retailers."

* * *

AMONG the manufacturers and selling agents of mechanical rubber goods, there is a wide difference in opinion as to the outlook. Some are inclined to be somewhat pessimistic, but other concerns are inclined to take the other view of the situation; their faith in the future has been shown by the running of their factories on full time, making goods which they expect to have orders for later. In the latter class is T. F. Blanchard, manager of the Mechanical Rubber Co. Mr. Blanchard is one of those conservative men who seldom talks for publication and for that reason his views are of interest. He says the jobbers are late this year in sending in specifications, but he is confident that the manufacturers will have a good year. Mr. Blanchard said:

"As an indication of how well grounded is our faith in the future, we are going ahead and are manufacturing for a good year, believing that the jobbers will soon send in their specifications with a rush, and then we will be prepared to look after this trade and fill orders promptly. Of course if we are mistaken in our judgment of business conditions we will simply have to run short time later on. But I see nothing to indicate that this will not be a good year, notwithstanding the hesitation of buyers during the first month."

* * *

THE managers of the local branches of the rubber tire factories are preparing for an immense trade this season. It is predicted that the automobile business in Chicago and its vicinity will exceed that of the bicycle business this year. The gain last year in this branch and the orders already booked for the season clearly warrant this belief.

Several automobile manufacturers have sold their entire output, with the exception of a few machines held in reserve for duplicate orders. Thomas B. Jeffery & Co. (Kenosha, Wisconsin), manufacturer of the "Rambler," entered at this year's shows an exhibit surmounted with a banner announcing that they have no automobiles in stock for sale.

The automobile orders so far this season have shown a tendency toward heavier cars. There will be a large number of heavy four cylinder cars in use in Chicago this season. Last year there were not to exceed ten four cylinder machines in the entire city. The tires on these big touring cars run into money rapidly, and it is this kind of orders the manufacturers are seeking.

Local managers of concerns making automobile and bicycle tires are pleased rather than otherwise over the continuation of small snowstorms which followed the heavy one about the middle of December, because they feel that it means an early and open spring, and everyone familiar with the tire trade knows

the value of pleasant weather during the early riding season, especially in Chicago.

* * *

WHILE cycling has been at low ebb in Chicago for three years at least, the demand for the country trade and western cities has been good. It has been the belief each year that the trade would revive in Chicago. It did increase some last season, but was far behind former big years. Local dealers say that the trade this year will depend much upon the weather. If Chicago has an early and open spring, cycling is expected to become more popular than it has been for years, and this is what the tire men are hoping for.

The heaviest bicycle trade in Chicago last season was carried on through the mail order houses, one house having handled 75,000 pairs of bicycle tires last year. But even this was a decided falling off in trade as compared with the showing for 1899, when this same concern handled 90,000 wheels, and tires considerably above that number. This trade extends all over the world, but it is exceedingly large in the west and south.

* * *

To get back to footwear, local dealers say that the trade rivalry between St. Louis and Chicago has led the merchants of the former city to boast that the general shoe trade carried on there is larger than that done in Chicago. But despite that fact, according to those familiar with the rubber shoe business, St. Louis can never come "within a gunshot" of Chicago in the volume of business done in rubber footwear. Chicago has always been a large rubber center.

* * *

THE Chicago headquarters of the Joseph Banigan Rubber Co. will be removed on February 1 from Monroe street near Market to Nos. 131-133 Market street, to store rooms better adapted to the needs of the trade. The agency here is now in charge of Mr. George S. Miller, late of the New England Rubber Co., of Boston.

Mr. Samuel M. Engs, resident manager of the Bowers Rubber Co. (San Francisco), left during the middle of the month for a tour of the trade in the northwestern, central, and southern states.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The fact that the tire manufacturers here had no rest last season was commented on recently in these columns, but they will not be able to make the same claim for 1904, as the first month of the year finds them without a special rush of orders. It is probable that different manufacturers will be found to assign different reasons for the present condition of affairs. An official of one important concern expressed himself to your correspondent as follows:

"The selling pool is responsible for the lack of business at this time. Before it was formed it was customary for tire manufacturers to sell goods in January to the automobile makers, and allow them to pay for the tires in March. The selling pool has put a stop to this practice. Now, if the automobile maker wants tires he must pay for them in 30 days or give his note. In the latter case he will have to pay interest, and he objects to this. In the former case, he is tying his money up in tires which he will not be able to sell until the automobile trade opens in the spring. Naturally he won't do this.

"My idea is that about the time the automobile trade opens up there will be such a demand for tires that by working day and night the tire manufacturers will hardly be able to supply

it. There is nothing wrong with the tire trade. To my mind this is a logical conclusion, and when spring comes we will see such an enormous trade in automobile tires that all records will be broken. More automobiles will be sold this year than ever before, and more tires, of course, will be needed to supply them. There is just one feature of the selling pool which is wrong. That is, the price of tires is too low. It is true that the pool raised prices a little, but it did not raise them enough. Automobilists have not yet been educated properly in the use of tires, and until they are—or better still, until the selling pool boosts the price a little—too many poor tires will be marketed, and these are the bane of the manufacturers' existence. The automobilist does not realize that it is cheaper to pay a little more for good tires than to buy poor ones and have to replace them in a very short time.

"But, as I said before, the user has not yet been educated, and until he is, the tire manufacturer will have to put a poorer quality of material in his tires. Of course we sell a great many good tires, but they are bought by men who have come to a realization of the fact that poor tires are not cheap tires. I could cite a number of instances where we have been ordered to produce a set of good tires, no matter at what cost. When we receive an order like that we put in the best material we have, and the result is a set of tires which will outwear three ordinary sets, at a comparatively small cost over the price of the poor ones. Every tire maker is using the best material he can considering the price he is getting for his product, but the trouble is that the price is too low and the user suffers. 'The poorer the quality the dearer the tire,' is a homely statement which should be pasted in every automobilist's hat.

"There are a few companies who are turning out tires which are really good, but they are not making any money on them. They are preparing for the future. They realize that when the time comes that owners of automobiles begin to realize that good tires mean cheap tires, they will be rewarded. Although every tire maker realizes that such a course will in the end inure to his benefit, not all of them have the courage of their conviction. Last year one rubber company lost \$40,000 on a contract from a single automobile manufacturer, because their tires were made from such material that nearly all had to be replaced. The company received a 'black eye' to which they were not entitled, simply because they could not get the right prices for their goods, and other instances could be related of the troubles of the tire maker, in this era of cheap tires.

"The selling pool can, and will, I think, correct this evil before long. But the evil which demanded the most urgent attention when the pool was formed, was the practice of manufacturers of automobiles of suiting themselves in regard to the size and weight of tires used on their machines. The automobile maker made all kinds of money, and the user and tire maker suffered. For instance, suppose the manufacturer would receive an order for a car, and the specifications should call for a 4 inch tire. He would place a 3 inch tire on the car, charge the buyer for the larger size, and pocket the difference. He argued that it was none of his business if the user of the tire did not get good results, and was willing to have the buyer and the maker fight out the tire question. Naturally the tire would not wear as well as the larger tire would have worn, and the maker would have to replace it. The selling pool put a stop to this practice, and as soon as it adds enough to the price of tires to enable the manufacturer to put better material into his tires, it will have accomplished its purpose. The tire manufacturer does not want the additional amount as profit; he simply wants to turn out a tire that will stand the wear and tear of hard usage, and will be a credit to him."

HAVE the rubber manufacturers at last solved the problem of speed in tire construction? The question is one which naturally appeals to the interest of automobilists. At least The Diamond Rubber Co. claim to have reached a point in tire development where they can be reasonably certain of being able to turn out any number of tires, all equally fast. What is of particular interest is the ability to supply a set of tires, each one of which shall be as fast, and no faster than the others.

"Up to this time," said an official of this company, "rubber manufacturers have constructed their tires for racing on a hit and miss plan. They never knew until the tires were tested whether one of a set would be faster than the others or not. In turning out a set of automobile tires for racing no one could tell to a certainty whether all would be fast. They had to be tested. Now we know to an absolute certainty just how fast our racing tires are. We know the secret of making racing tires uniform in speed, and it will open a new era in the manufacture of fast tires."

The Diamond Rubber Co., by the way, made the tires used on the Packard "Grey Wolf" which, at Daytona, Florida, on January 4, broke all American records by running a mile in 46 2/5 seconds and a kilometer in 29 2/5 seconds. These are also world's records on cars of its class. As illustrating the terrific strain to which tires are subjected in speed trials of this sort, it may be noted that the track of the "Grey Wolf" in the sand showed that very frequently the car was absolutely clear of the ground. These leaps covered distances as great as eight feet by actual measurement. As their sudden release from resistance increased the rapidity with which the wheels revolved to an almost incredible extent, the effect upon the tires when the car again struck the sand and obtained traction may easily be imagined.

* * *

JACOB PFEIFFER, JR., president of the Miller Rubber Manufacturing Co., of Akron, has filed a suit in the common pleas court here, praying for the recovery of 189 shares in the company, of the par value of \$50 each, issued to Harvey L. Miller, and for an injunction to prevent a transfer of the shares by Mr. Miller while the case is pending. The complaint alleges that the shares in question were allotted to Miller without any payment for the same, on the understanding that he was to remain in the employ of the company, instead of which he has since gone to the Canton Rubber Co., where he is using information gained from his former employers, to their detriment. Later The Miller Rubber Manufacturing Co. filed a suit in the common pleas court of Stark county, against the Canton Rubber Co., alleging infringement of the trade marks of the former company as applied to rubber gloves, face masks, and the like.

* * *

THE receiver of the People's Hard Rubber Co., James W. Hoffert, has filed his final report in the probate court at Akron. He states that he received from the sale of personal property \$85,000; sale of desperate claims, \$100; on collections, etc., \$10,557.52; a total of \$95,657.52. For disbursement to general creditors there will be \$91,381.02, which, the assignee states, will pay a dividend of 71 4/5 per cent. The real estate of the defunct company some time ago brought \$80,000. The People's Hard Rubber Co. was incorporated in 1901, with \$200,000 capital; the factory was closed in November, 1902, and an assignment followed in December.

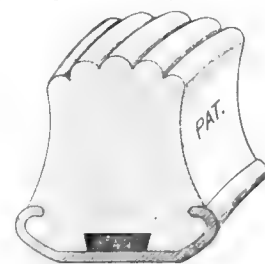
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THE plant of the Superior Rubber and Manufacturing Co., at Cuyahoga Falls, is not yet in operation, although its promoter, Mayor E. M. Young, of that town, had promised that it would be in operation by the first of the year. All of the machinery

has not been installed, and according to the latest statement of Mayor Young, the company will be reorganized, a large number of the original stockholders having failed to pay for their stock. It is understood that an effort will be made to secure capital in the East.

* * *

THE Swinehart Clincher Tire and Rubber Co., of Akron, was incorporated January 14, under Ohio laws, with \$100,000 capital by James A. Swinehart, F. Siegrist, Frank Kearns, Henry Feuchter, and Ben. O. Swinehart, to exploit a new solid rubber tire patented by the first named. Although the organization



of the company has not been completed, offices have been opened in Akron and the work of securing a market for the tires begun. It is intended, in time, to build a factory, but at present the company will contract for the manufacture of their tires. This is the first solid tire, for automobile use, so constructed as to fit G & J clincher rims, and it is

pointed out that this rim, by reason of its lightness, has advantages over the heavier channel used with other solid tires. The side wire is used, as in the Firestone tire, but in the Swinehart tire it extends but half way into the tire. A wire is also run around the rim in the center of the tire, but this has no part in keeping the tire on the rim. In case it is necessary to remove the tire, the middle wire, which is made of soft metal, is melted by the application of electricity, it in turn melting the cement, and allowing the tire to be pulled from the rim. This is a feature seen in no other solid tire, according to the claims of the Swinehart company. The tire tread is corrugated, and great things are claimed for it.

* * *

THE annual meeting of The B. F. Goodrich Co. was held on January 13, and resulted in the reelection of the old officers, as follows: George T. Perkins, president; Bertram G. Work, vice president; George W. Crouse, second vice president; R. P. Marvin, secretary; W. A. Folger, treasurer; W. A. Means, assistant treasurer; F. H. Mason, general manager of works. These officers, in connection with Charles C. Goodrich, compose the board of directors. The reports for the year, it is understood, proved to be very satisfactory.

At the annual meeting of the Summit Rubber Co. (Barberton), held on January 12, the following officers were elected: C. A. Brouse, president; A. Warner, vice president; Mrs. Della Warner, treasurer; E. M. Hollinger, secretary. The directors are E. M. Hollinger, C. A. Brouse, A. Warner, George B. Spencer, Mrs. Della Warner.

Trouble between the employers and the iron molders of the city this month resulted in the J. K. Williams Machine Co., manufacturers of rubber machinery, closing their foundry department for a few days. The molders went out because of a decrease in wages which took effect at the first of the year, but those in the Williams company's plant have returned to work.

Among the Akron men who attended the New York automobile show were Messrs. W. B. Miller, of The Diamond Rubber Co.; H. E. Raymond, of The B. F. Goodrich Co.; L. E. Sisler, H. S. Firestone, and S. G. Carkhuff, and J. M. Gilbert of the Firestone Tire and Rubber Co.; C. W. Seiberling and H. J. Dingman of the Goodyear Tire and Rubber Co., and A. J. Swinehart, of the new Swinehart company.

Mr. Frank A. Seiberling, general manager of the Goodyear Tire and Rubber Co., has returned home from a visit of several weeks in the south.

THE TEXTILE GOODS MARKET.

SINCE the last issue of THE INDIA RUBBER WORLD, staple cotton has passed 15 cents, and there is nothing in sight that threatens to impede its upward course. The nervousness which lately prevailed in the cotton market has given place to confidence such as existed prior to the remarkable series of fluctuations which followed the publication of the government's December crop estimate. Belief in still higher prices is almost universal in the Southern cotton states, as well as on the New York Cotton Exchange, although a feeling of conservatism prevails which promptly checks any tendency of excited bulls to run away with prices. The course of values during the month has been almost constantly upward, both in contract and in spots. Buyers are finding it increasingly difficult to supply their needs in the interior, and are compelled to draw from port stocks, thus cutting down that source of supply. Another evidence of approaching exhaustion is the presence among late receipts of considerable frosted and stained cotton, indicating that the ends of the crop are coming in with the scrapings of the gins and fields. Indications from the best sources are favorable to the maintenance of the price of cotton at 10 cents and upwards for at least the next five years.

During the past week spot cotton has reached its highest point since 1874, when middling was quotable at 18 cents. All grades have advanced in proportion and the tone of the market at the high point was officially designated as firm. As compared with last year the present price of 15.25 cents represents a gain of 6 cents per pound. But the high price reached has not in the least checked the demand. On the contrary, it seems to have created renewed interest in the staple, the market being phenomenally active in nearly all parts of the country. The last week in January saw the largest movement in cotton from the spinner's standpoint that has been known during the present season, despite the fact that prices have been at a level scoffed at and which it was claimed could never be reached without seriously curtailing the amount of cotton consumed. Following are the prices of cotton middling upland spots at the leading ports:

	New York.	New Orleans.	Liverpool.
January 1.....	13.50 cents	13 $\frac{1}{4}$ cents	6.96d.
January 8.....	13.40 cents	13 $\frac{1}{8}$ cents	7.06d.
January 15.....	13.80 cents	13 $\frac{3}{8}$ cents	7.50d.
January 22.....	14.75 cents	14 $\frac{1}{8}$ cents	8.00d.
January 27.....	15.25 cents	15 $\frac{1}{8}$ cents	8.20d.

The exceptionally high prices at which staple cotton has sold has been reflected in the goods market in such a way that the movement of cloth has been greatly impeded. Manufacturers of duck and sheeting have caused their prices to follow as closely in the wake of raw material as has been possible for them to do, and yet they contend that the advance in the price of their product still lags considerably behind the rapid and speculative upward jumps of the staple. Prices on all lines of cottons have been forced to what many consumers consider a prohibitive point, and yet so far as the rubber interests are concerned there has been a very fair demand for both ducks and sheetings. As nearly as can be estimated about two-thirds of the mechanical rubber manufacturers have placed their contracts for textiles. Last fall they commenced to cover their requirements for the year, at 19 cents per pound. Gradually this class of duck consumers became convinced that prices were upward inclined, and they ventured far enough to place their orders for fair sized quantities at prices ranging all the way from the above figure to 23 cents, those paying the last quotation being the ones who deferred the longest.

During the month under review the duck people have not

been successful in convincing the remaining rubber manufacturers that they could save money by ordering quickly, and the result has been that these same concerns are still hanging fire on their supplies of textiles. Those who have exhausted their last year's supplies have been buying as they required the goods, paying from 24 to 25 cents per pound. Duck such as is consumed by the rubber trade is held to-day at the last mentioned figure, and the market is exceptionally firm at this basis, with prices most likely to advance from time to time. The writer was informed that the price of duck might touch 30 cents before the middle of February, but this information came from a seller. One consumer has cut away from the duck manufacturers, and has bought a number of looms with the view to weaving his own cloth. He intends to purchase his cotton yarn, but the fact that he has already turned down the spinners who have quoted him prices around 22 cents for such numbers as he asked for, leads to the belief that this rubber manufacturer still retains his bearish propensities. One mechanical rubber manufacturer visited the market a week ago, procured prices and went home. The next day he wired a New York commission house that he would place his order for 300 rolls at the price quoted him while here. The house wired back that the price had advanced a cent a pound since his visit.

The duck mills, are as a rule, running at full capacity, having covered on cotton sufficiently to fill contracts taken up to the first of the year. Of course the mills that are paying 15.50 cents for their staple are making a good price on that basis, and the same holds good with all classes of light-weight sheeting. As will be seen by the following table, some prices have not been advanced since our last issue:

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

	Pick.	Yds. to Lb.	
36" Household Favorite.....	56x60,	4.00	6 $\frac{1}{4}$ cents.
40" Household Favorite.....	56x60,	3.60	7 cents.
36" Henrietta, L. L.....	48x52,	4.00	6 cents.
39" Henrietta, H.....	68x72,	4.75	(net) 5 $\frac{3}{4}$ cents.
38 $\frac{1}{2}$ " Henrietta, S.....	64x64,	5.15	(net) 5 $\frac{1}{4}$ cents.
40" Henrietta, P. W.....	48x40,	2.85	7 $\frac{1}{4}$ cents.
36" Florence C.....	44x44,	6.15	4 $\frac{1}{4}$ cents.
40" Majestic C. C.....	48x48,	2.50	(net) 8 $\frac{1}{2}$ cents.
40" Majestic B. B. B.....	do.	2.70	" 8 cents.
40" Majestic B. B.....	do.	2.85	" 7 $\frac{1}{2}$ cents.
40" Norwood.....	do.	3.60	" 6 $\frac{1}{2}$ cents.
36" India, A. A. A.....	do.	3.00	" 7 $\frac{1}{4}$ cents.
<i>Sheetings.</i>			
40" Highgate.....	6 $\frac{3}{4}$ c.	40" Selkirk.....	.8 c.
40" Hightown.....	7 c.	40" Sewell.....	7 $\frac{3}{4}$ c.
40" Hobart.....	7 $\frac{1}{4}$ c.	40" Mohawk.....	11 c.
40" Kingstons.....	8 c.	40" Marcus.....	6 $\frac{1}{2}$ c.
39" Stonyhurst.....	.6 c.	40" Mallory.....	6 c.
39" Sorosis.....	5 $\frac{3}{4}$ c.	36" Capstans.....	4 $\frac{1}{2}$ c.
40" Seefeld.....	8 $\frac{3}{4}$ c.	<i>Osnaburgs.</i>	
		40" Iroquois.....	10 c.
		40" 10 oz. Carew.....	13 c.
		40" 11 oz. Carita.....	14 c.

Felts have been in fair demand from the rubber footwear manufacturers, but quantities called for in most cases have not been as large as in former years, owing to the high prices ruling. Wools of every description have continued high, and every sign available at this writing points to a continuation of these prices. Manufacturers of every description using wool have exercised the utmost conservatism, hoping that the market would be easier in which to operate later in the season, but as yet these hopes have not been realized. What effect the high prices of raw material is going to have upon rubber goods is causing some speculation.

The belting concerns have been the strongest protesters against the high price of duck, on account of the large proportion of textiles required for their product.

Reports continue to arrive of results from experiments in British West Africa pointing to the possibility of an important extension of the world's cotton growing field.

NEW GOODS AND SPECIALTIES IN RUBBER.

A NON PUNCTURABLE PNEUMATIC TIRE.

THE cut herewith illustrates the cross section of a new punctureless and non collapsible pneumatic tire designed to meet the wants of a considerable number of persons whose experience with the ordinary pneumatic



tire has not been wholly satisfactory. The tire embraces a central rubber core, and two air chambers. The rubber core lessens the danger of punctures to a minimum and overcomes entirely the danger of collapsing, as the tire runs

upon the core. In case of the puncture of one of the air chambers, only that one can become deflated, and there still remains two-thirds of the tire to ride upon. Leakage around the lugs is prevented by the lugs being embedded in the central rubber core, entirely away from the air chambers. The tire is inflated by means of a single valve, which connects with each of the two chambers. This tire has been patented in several countries—the United States patent being No. 745,040, November 24, 1903—by Dr. T. J. Cooper, Paterson, New Jersey.

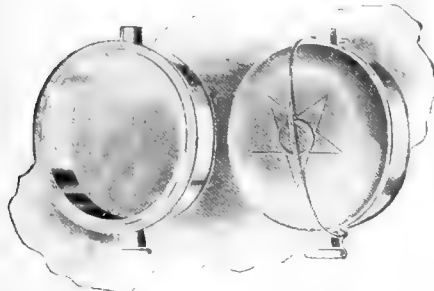
WILLIAMS NON SLIPPING TIRE.

AMONG the new features in tires exhibited at the recent cycle shows in England was Williams's patent "Uvula" rubber tire for motors, fitted to an open channel by means of a patent adjustable band and fastenings. A cushion tire with an uvula shaped buffer between the tread and the steel band; the band is passed through the bed of the tire clamped into the steel channel. In the event of the tire being damaged, a section can be cut out and a new piece inserted. A sectional view of the tire is illustrated herewith. The advantages of a pneumatic tire, with regard to resiliency, are claimed, with a superior degree of rigidity, greater durability, and freedom from creeping, rolling, or side slip. [The Williams Tyre Co., 4, Denman street, Piccadilly circus, W., London.]



"KLEEN INSIDE" NURSING BOTTLE.

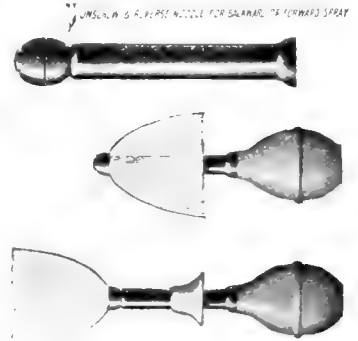
THE difficulty of cleaning the inside of the ordinary nursing bottle, and keeping it clean, suggested to the inventor of the bottle illustrated herewith the idea of a milk receptacle, every part of which is easily accessible. It may be made in the shape of an ordinary flat oval nursing bottle—but it differs from all others in being made in two pieces, one side lifting off the other like the lid of a box. The joint is made tight by means of a rubber washer. The two sides



are held together by a metal clamp that snaps on in a moment and can be removed instantly, though the spring is too strong for an infant's fingers to open. It is intended to retail at 25 cents. [Lee Anderson, No. 97 Chambers street, New York.]

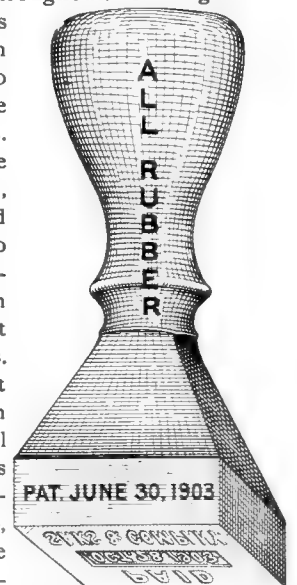
"DR. HALL'S MAGICAL SYRINGE."

A NEW spray syringe, patented in the United States September 1, 1903, has been placed upon the market under the name given above. The features in this contrivance claimed to be new are the changeable directions of the sprays from the nozzle. In fact, the entire novelty of the new construction is in the nozzle. For the rest, the syringe is an ordinary soft rubber bulb, attached directly to the hard rubber nozzle. There are no valves, no pistons, no rubber tubes; the whole construction is simple and there is no liability of any part to get out of order. At the end of the hard rubber tip, however, there is a movable nozzle which screws on to the end of the tip, and its position is reversible. When screwed on in one position it throws a radiating spray forward, and when screwed on in a reverse position, the spray is thrown backwards. The merit claimed for this appliance, giving as it does a douche both forward and backward, is that it is thoroughly cleansing in its effect. The syringe is also fitted with a shield of soft rubber, which prevents any leaking and adds to the convenience of its use. One more feature is that the construction of the syringe prevents the injection of air. [The Vant Woud Rubber Co., No. 88 Reade street, New York.]



"ALL RUBBER" STAMPS.

THIS is a new line of rubber stamps, made without the use of any metal or wood, but of rubber throughout. Among the advantages claimed for such stamps is their durability, as compared with other styles; their adaptation to rapid work and hard usage; and the production of uniformly good prints. If struck carelessly or quickly the impression is not spoiled or blurred, as the pressure is equalized and there is no rebound. The wear to stamps and noise of stamping is reduced. They will not break when dropped, and are claimed to outlast stamps mounted on rigid handles. Besides, they are light in weight and restful to the hand, which is an item of importance to railway postal clerks, for example, whose work is practically continuous for long periods of time. Patent No. 732,236, issued to Eugene M. Tilden, June 30, 1903. Leading stamp manufacturers have been licensed under the patent. [Lamb & Tilden, No. 525 Tenth street, N. W., Washington, D. C.]



NEWS OF THE AMERICAN RUBBER TRADE.

SALE OF THE WATKINSON SHOE FACTORY.

A CHANGE has taken place in the control of the Watkinson rubber shoe factory, at Philadelphia. The details of the bankruptcy of George Watkinson & Co. appeared in THE INDIA RUBBER WORLD February 1, 1902, including the appointment of the Provident Life and Trust Co., of Philadelphia, as trustee, and T. M. Etting, referee in bankruptcy. By recommendation of the creditors' committee, and under the authority of the court, the trustee, in connection with the Messrs. Watkinson, has since continued the plant in operation. It was thought that this course would best serve the interests of the creditors—not only by avoiding a sacrifice of the raw material and material in process, as well as of the manufactured goods, but, by earning the profits manifestly in the business, to save the expense and deterioration of an idle factory. It was also thought important to keep the business together—its organization, its prestige in the market, its connection with several thousand customers, in short, to preserve the good will intact. Most of the salesmen formerly employed were put on the road to solicit orders and the business was conducted very much in the usual manner. Steps were taken by the trustee to recover certain large amounts claimed by the bankrupts to be properly payable by Charles R. Flint, or Flint & Co., of New York, on notes given by the shoe firm for the alleged accommodation of the latter—these obligations having been the cause of the assignment. While it is understood that a good business has been done on the whole, in marketing the products of the factory, the business was unable to stand the strain of the large indebtedness with which the firm, in spite of all efforts, still found itself burdened, and a crisis in their affairs occurred during the past month.

In pursuance of a call by Mr. Etting, the referee in bankruptcy, a meeting of the creditors was held in the United States circuit court room in Philadelphia, on January 13. This meeting was called to act upon an offer from an outside party to purchase the entire business. This offer was made by Charles MacVeagh, New York, and was understood to aggregate some \$300,000 for the business and plant, without including the cash on hand or accounts receivable. It is understood that, at the same time, the Messrs. Watkinson made an offer of full settlement of the claims, by giving a series of notes to mature during several years. It was decided by the creditors that, before taking final action, a report by expert accountants would be desirable, and an adjournment was taken to January 21.

At the second meeting it was decided to accept the offer of Mr. MacVeagh, and on the next day application was made before Judge McPherson in the United States district court, by the Provident Life and Trust Co., as trustee, for permission to sell the property. The court granted the permission on the same day—January 22—since which time the details of making the transfer have been in progress. The published sale price of \$135,322 evidently refers to the plant alone.

Charles MacVeagh is a director in the following corporations: American Steel Hoop Co., Bethlehem Steel Co., International Traction Co. (also secretary), and National Steel Co. At No. 15 Broad street, New York, his name appears on the office door of the legal firm of Stetson, Jennings & Russell, as connected with that firm. Mr. Francis Lynde Stetson, of this firm, by the way, is a director of the United States Rubber Co. When visited by a representative of THE INDIA RUBBER WORLD, Mr. MacVeagh said:

"I have no statement to make regarding the business of George Watkinson & Co. You will have to see my attorney, Mr. Samuel Norris, of Nos. 9 15 Murray street." [Mr. Norris is secretary of the United States Rubber Co., at the address given.]

No statement could be obtained from Mr. Norris, but President Samuel P. Colt said to THE INDIA RUBBER WORLD reporter, when asked if the United States Rubber Co. had acquired control of the Watkinson plant:

"That is a matter about which I am unprepared to make any statement at the present time. The plant was sold by order of court, on January 22, to Mr. Charles MacVeagh, a lawyer, but the United States Rubber Co. has not acquired the property as yet and whether it will or not remains to be seen."

"Mr. MacVeagh," it was suggested, "has stated all information would have to be given out at the office of the United States Rubber Co."

"Quite right!" exclaimed Colonel Colt; "but at the present time I can give you no definite information, further than that we know that Mr. MacVeagh has purchased the plant and that the sale has been confirmed by the court."

"Can you say what the price was, that Mr. MacVeagh paid?"

"Well there were many details and various prices in the transaction which could hardly be explained in a brief statement, but in round numbers it may be stated that the price was \$300,000."

"Will Mr. Watkinson continue to manage the plant?"

"Well that is certainly beyond me," replied Colonel Colt. "I know nothing about Mr. Watkinson's plans, or who will manage the plant."

Mr. Watkinson also had no statement to make on this point, when seen by THE INDIA RUBBER WORLD'S Philadelphia reporter.

BANNER RUBBER CO. (ST. LOUIS).

A CIRCULAR issued from the office of the Monarch Rubber Co. (St. Louis, Missouri) announces the change in the name of that corporation to the Banner Rubber Co. This was the pioneer rubber manufacturing company in that region, having begun making rubber footwear about March, 1900. The circular sets forth the desirability of a change of name, in order to prevent the confusion of their business with that of certain other concerns. A report having got into print that the factory was passing under control of the United States Rubber Co., President Samuel P. Colt, of the latter company, was interviewed on the subject for THE INDIA RUBBER WORLD. He said:

"That is a matter about which I can say nothing at all. The United States Rubber Co. has nothing to say concerning the Banner Rubber Co."

Under date of January 28 the Banner Rubber Co. advised THE INDIA RUBBER WORLD:

"There is absolutely no truth in the report. Please publish our unequivocal denial."

NEW YORK RUBBER CO.—ANNUAL MEETING.

THE annual meeting of the stockholders of the New York Rubber Co. for the election of trustees was held January 26 at the office of the company, No. 84 Reade street, New York. The old trustees were reelected and the place on the board made vacant by the death of Charles S. Sanxay was filled by the selection of John Acken, son of President W. H. Acken. The old officers were reelected without change.

STANDARD UNDERGROUND CABLE CO., PITTSBURGH.

THE annual report of this company shows gross business for 1903 of \$9,192,618, and net earnings of \$704,438, or about 35 per cent. on the company's \$2,000,000 capital. Dividends amounting to 12 per cent. were paid, leaving \$474,706 to add to surplus, which now amounts to \$1,229,112. The company's business for 1903 was more than double that of 1902. The company has no outstanding notes, mortgages, bonds, or preferred stock, and no contingent liabilities on business paper of customers. The mills of the company handled during 1903 copper equal to 5 per cent. of the total production of copper of North America for that period. On December 31, 1903, the company had unfilled orders amounting to over \$1,000,000 and orders have been booked since that date amounting to over \$600,000.

ANNUAL DINNER OF THE NEW ENGLAND RUBBER CLUB.

A PRELIMINARY notice has been issued to the members of the Club that arrangements have been made for the annual dinner on Wednesday, February 17, at which several distinguished citizens have promised to speak, including the Hon. William H. Moody, secretary of the navy, on "Our Navy"; Hon. David A. De Armond, congressman from Missouri, on "Civil Service"; Hon. Frederick H. Gillett, congressman from Massachusetts, on a subject to be announced later. Further particulars will be mailed later by the Entertainment and Dinner committees, but in order to facilitate the completion of the necessary arrangements, members are asked to assist by promptly advising Mr. E. E. Wadbrook, assistant secretary, No. 150 Franklin street, Boston, of their intention of being present, and also, if possible, the number of guests they expect to have. The preliminary notice is signed by L. D. Apsley, president of the Club, and Mr. Wadbrook, the assistant secretary.

THE COMBINATION RUBBER AND BELTING CO.

[See THE INDIA RUBBER WORLD, January 1, 1901—page 138.]

WILLARD P. CLARK, of New Brunswick, New Jersey, receiver for this company, on January 14 submitted a report at a meeting of the creditors at the office of F. W. Leonard, referee in bankruptcy, at Newark. The liabilities, as before stated, were reported at \$286,284.52 and the assets at \$97,231.87. All the 125 creditors have filed claims. It was the sentiment of those present that the concern might be extricated from financial difficulty if the business was continued. According to Mr. Clark, he had increased the assets \$7,000 since he assumed the duties of receiver.

INTERNATIONAL RUBBER FACTORY FOR SALE.

THE receiver of the International Rubber Manufacturing Co. announces for sale or lease the plant of that company in Jersey City, New Jersey. The plant is well equipped for the manufacture of air brake hose, rubber tires, horseshoe pads, and the like, on which it has been run for the past two years. The factory has been operated since December by the receiver, in coöperation with a committee who desire to end their trust without dismantling the plant. Further details will be found in the advertising column of this Journal. The details of the receivership have appeared in our recent issues.

DECISION IN A SUIT OVER SYRINGE PATENTS.

THE suit of the Marvel Co. against The Tullar Co., in the United States circuit court in the southern district of New York, has been dismissed, in an order signed by Hoyt H. Wheeler, judge, December 8 last. This action was begun in May, 1901, the complainants, who had purchased from Eugene Tullar Pearl the rights to his invention known as the "Marvel" whirling spray syringe, suing for an injunction to restrain Tullar from selling an alleged infringing article under the name of the

"Tullar" syringe. The defense was that the "Tullar" syringe was a later and distinct invention, and not an infringement on the original patent granted to Pearl and now controlled by the Marvel Co.

LECTURE COURSE IN A RUBBER FACTORY.

A NOVEL and progressive policy has been adopted by the management of a leading rubber factory in Canada, the nature of which may be best outlined, perhaps, by presenting here the full text of a circular issued recently by the company:

THE CANADIAN RUBBER CO., LIMITED.

MONTREAL, QUE., December 28, 1903.

OFFICE OF THE GENERAL MANAGER.

[Circular No. 16.]

TO ALL EMPLOYÉES: In order to inculcate more practical information to employés of the company, it has been decided that a series of weekly or semi-weekly lectures be given, commencing with the New Year. The following officers of the company have generously offered their services in this connection:

Mr. McLAREN, subject, Chemistry.

Mr. McEVOY, Mechanical Engineering.

Mr. THORNTON, Crude Rubber and Processes of Manufacture.

Mr. E. A. WRIGHT, Accounting and Financing.

Mr. D. L. MCGIBBON, System and Organization.

It is the desire of the management that all employés, and more especially the juniors, should attend regularly. The lectures will be strictly confined to practical information regarding the rubber industry, and will no doubt be of great assistance to any one anxious to acquire "Knowledge." Mr. A. D. Thornton, general superintendent, will supervise all details in connection with these lectures, and will issue a notice of the date and place of the first lecture.

D. LORNE MCGIBBON,
General Manager.

The lectures are to be given in one of the large rooms of the factory, suitable for the accommodation of all who may wish to attend. Mr. D. Lorne McGibbon, in his new position as general manager of the Canadian Rubber Co., has proved a very active man, and the new departure indicated above is an indication of the progressive spirit which he has displayed, and in which he is supported by an able staff of assistants, coupled with the organization of one of the oldest and most substantial rubber concerns in the country. Under his management the plant of the company is being completely reconstructed, and when it is finished will be one of the best rubber mills in existence.

THE WIRE AND CABLE CO. (MONTREAL.)

THIS company, with offices and works at No. 241 Grey street, Montreal, are manufacturing brass and copper wires, including copper wires for all electrical purposes, with insulation of rubber, paper, etc. It is understood that they contemplate the installation of rubber machinery, but at present they are buying compounded rubber from factories at Montreal and Toronto.

THIS SHOE COMPANY NOT IN COAL MINING.

THE Boston Rubber Shoe Co. was mentioned recently in the Boston newspapers as included in a number of manufacturing corporations in that city and its vicinity about to form a syndicate for the purpose of purchasing valuable coal lands in the New river section of West Virginia with the idea that it could mine coal and transport it to Boston cheaper than it can be purchased from the dealers. The purpose of the movement was stated to be to obtain coal at all times at cost prices and be independent of any combination that can raise prices of fuel, either because of a strike of miners or for any other reason. Colonel Harry E. Converse, one of the directors, informed an INDIA RUBBER WORLD correspondent that the Boston Rubber Shoe Co. would not be a party to the arrangement, since they could already procure all the coal they needed

at mine prices; he knew nothing about the details of the movement more than had appeared in the newspapers. It is understood, however, that the shoe company were among those solicited to join the syndicate.

DEFUNCT RUBBER CORPORATIONS.

A PROCLAMATION by the governor of New Jersey, under date of January 5, 1904, declares the charters of certain named corporations formed under the laws of that state to be void, on account of their failure to pay the corporation taxes assessed against them by the state for the year 1901. Following are the names of such concerns as were related to the rubber trade, together with further details in regard to some of them. Only one of the several corporations ever advanced to the point of doing business:

American Pegamoid Co., New York, incorporated December 17, 1897, capital \$5,000,000; promoted by Joseph J. Byers, to exploit the "Pegamoid" patents in America.

Commonwealth Rubber Co., incorporated July 20, 1900, capital \$50,000; to manufacture rubber goods; principal office, East Orange, N. J.

Ducastle Tire Co., Philadelphia, incorporated in March, 1900, capital \$100,000; to manufacture in America the Ducastle tire, a French invention.

Frost Tire and Rubber Co., incorporated May 7, 1900, capital \$200,000; to manufacture rubber goods; registered office, East Orange, N. J. Hallanan "Humane" Rubber Pad and Horse Shoe Co., New York, incorporated in January, 1899, capital \$250,000; to make rubber horseshoe pads.

Paar Double Cushion Horseshoe Co., incorporated June 5, 1899, capital \$50,000; to manufacture double cushion horseshoes and a general line of horseshoes.

Pacific Rubber Co., Elizabeth, N. J., incorporated February 16, 1894, capital \$30,000, to manufacture mackintoshes; receiver appointed in November, 1898, and the factory closed soon thereafter.

Paranite Rubber Co., incorporated May 10, 1900, capital \$5000, "to prepare and manufacture and sell India-rubber and India-rubber products."

BENEDICT REIS IN BANKRUPTCY.

ELBERT B. HAMLIN has been appointed receiver in bankruptcy for the assets of Benedict Reis, who did business at No. 23 Lisenard street, New York, as the Neptune Rubber Co., manufacturing mackintoshes and raincoats. The business was conducted for several years at No. 295 Grand street as the Neptune Rubber Co. by Benedict Reis and Israel Suchman. The latter retired at the end of 1902; in April last the business was removed to Lisenard street; on November 26 it suffered a serious loss by fire. On January 2, 1904, Reis took Alexander N. Jacob into partnership, and on January 13, on the application of the latter, Isaac Lehman, No. 395 Broadway, was appointed receiver. It was then stated that Reis had been overcome by the strain of business troubles and his whereabouts were unknown. According to the receiver, the firm's assets are about \$20,000 and the liabilities only a few hundred, though Reis's liabilities in his old business are believed to be large. The petition in bankruptcy against Reis, of January 20, alleges that he was insolvent and that he transferred all of the stocks and accounts of his old firm to the new, while the new did not assume the obligations of the old.

ELECTRICITY IN A GREAT PRINTING OFFICE.

TWENTY-ONE of the large pages of the *Electrical World and Engineer* (New York) are devoted to an illustrated description of the electrical equipment of the Government Printing Office at Washington, which is the largest printing office in the world. The government printing costs \$6,500,000 yearly and makes work for over 4000 employes. Yet throughout the great seven story building—not counting basement and loft—175 × 408 feet, power and light and heat are supplied by means of electricity, through the application of the latest discoveries and improvements. The journal quoted says: "The contract for

furnishing some of the wire and cables for the office was made with the Safety Insulated Wire and Cable Co. (New York), and amounted to over 100 miles of conductors, ranging in size from 1,000,000 cm. to No. 12 B. & S. gauge. The specifications were the most rigid that have ever been received by that company for inside wiring, Article 37 of the contract being as follows: 'All rubber wire, both stranded and solid conductors, shall have an insulation of seamless rubber compound, containing not less than 40 per cent. of pure Pará rubber, and shall show an insulation test of not less than 1200 megohms per mile; must be concentric and free from flaws and holes; must have a smooth surface and circular section.'"

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED STATES RUBBER CO.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Dec. 26	455	10 $\frac{1}{2}$	10 $\frac{1}{8}$	200	39 $\frac{1}{2}$	39 $\frac{1}{2}$
Week ending Jan. 2	1,335	12 $\frac{1}{4}$	11	2,015	41 $\frac{3}{8}$	39 $\frac{3}{4}$
Week ending Jan. 9	1,870	12	11 $\frac{3}{4}$	910	42 $\frac{1}{2}$	41
Week ending Jan. 16	2,250	12 $\frac{1}{2}$	10 $\frac{3}{4}$	1,685	43	41 $\frac{1}{2}$
Week ending Jan. 23	5,955	13 $\frac{3}{8}$	12 $\frac{1}{8}$	6,010	50 $\frac{3}{8}$	43 $\frac{1}{4}$

PREFERRED STOCK, \$23,525,500.

Last Dividend, January 31, 1901—1 %.

	1900.	1901.	1902.	1903.
Shares sold.	90,924	132,278	104,202	62,343
Highest price.	104 $\frac{3}{4}$	85	64	58
Lowest price.	77 $\frac{3}{4}$	47	49 $\frac{1}{2}$	30 $\frac{1}{4}$

COMMON STOCK, \$23,666,000.

Last Dividend, April 30, 1900—1 %.

	1900.	1901.	1902.	1903.
Shares sold.	502,377	318,038	53,356	80,890
Highest price.	44	34	19 $\frac{3}{8}$	19 $\frac{1}{2}$
Lowest price.	21	12 $\frac{1}{2}$	14	7

RUBBER GOODS MANUFACTURING CO.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Dec. 26	1,050	18	17 $\frac{1}{2}$	310	72	71
Week ending Jan. 2	3,680	18 $\frac{3}{4}$	18	1,175	77	72 $\frac{1}{2}$
Week ending Jan. 9	1,685	18 $\frac{3}{8}$	17 $\frac{1}{4}$	....	....	....
Week ending Jan. 16	2,330	18 $\frac{1}{2}$	17 $\frac{3}{8}$	234	74 $\frac{3}{4}$	74 $\frac{3}{4}$
Week ending Jan. 23	18,380	21 $\frac{7}{8}$	18 $\frac{1}{4}$	2,366	79 $\frac{3}{4}$	75

PREFERRED STOCK, \$3,051,400.

Last Dividend, December 15, 1903—1 $\frac{1}{2}$ %.

	1901.	1902.	1903.
Shares sold.	18,541	39,582	55,280
Highest price.	90	74	84 $\frac{1}{2}$
Lowest price.	65	63	60

COMMON STOCK, \$16,941,700.

Last Dividend, July 15, 1901—1 %.

	1901.	1902.	1903.
Shares sold.	172,631	339,895	276,789
Highest price.	38 $\frac{1}{4}$	25 $\frac{3}{8}$	30
Lowest price.	18	17 $\frac{1}{4}$	12

PHILADELPHIA BOUGHT FROM THE HIGHEST BIDDER.

THE Philadelphia *North American* has been publishing a series of articles indicating that, through favoritism in awarding contracts for supplies, the municipal authorities of that city have saddled the taxpayers with much unnecessary expense. In its issue for January 12 the *North American* says, in relation to rubber supplies:

A cursory glance over the schedule of bids for these goods for 1903 in the Controller's office shows a list of awards to a high bidder for nearly sixty articles of which rubber is a constituent part, as well as for a number of sizes of fire and suction hose, from which the possibility of competition was eliminated by a specification requiring particular brands of goods, which could be furnished by but one bidder.

Then follows the details of the bidding on a number of articles, showing that the awards were made regularly to one individual, although lower bids were made by several leading Philadelphia houses in the rubber goods trade. For fire and suction hose there was only one bidder—the agent for the brands specified. A table is given of other items—garden hose, steam packing, etc., for the department of public safety—where awards were made at an average of 71 per cent. over the lowest bids, and in a second table the average over the lowest bid was 95 per cent. It is intimated that under the new conditions which now prevail, wider competition will be permitted.

ANCHOR TIRE AND RUBBER MANUFACTURING CO.

THE company have found it necessary to increase their capital stock from \$125,000 to \$225,000, in order to purchase outright the real estate, buildings, and machines embraced in their plant at Setauket, Long Island. The company are just bringing their factory equipment to completion. They are adopting new machinery constructed for wrapping the insulation under the new process. The first and second insulation are in contrasting colors, enabling the operator to observe the application and detect any imperfections that may occur. The wrapping method is much more perfect and gives a better insulation than the tubing process, as the first and second insulation follow each other, and the output is fully double the tubing method, and much more uniform and reliable. The company will be pleased to correspond with the trade regarding their wire product.

NEW INCORPORATIONS.

U. S. AGENCY OF THE MICHELIN TIRE CO., January 23, 1904, under New York laws; capital, \$30,000. Incorporators: Norris N. Mason, J. N. Marshall, J. J. Ackenman, all of New York city. Office, No. 132 West Twenty-seventh street, New York.

—The Reliance Rubber Co. (Akron, Ohio), January 13, 1904, under Ohio laws; capital \$150,000. Incorporators: William Bailey, Wilber S. Bailey, George B. Spencer, W. J. Ellis, and W. J. Hart. It is understood that the company will establish a factory at Cuyahoga Falls, Ohio.

TRADE NEWS NOTES.

THE Indianapolis (Indiana) Rubber Co. are now devoting their factory almost exclusively to the manufacture of the "G & J" tires. They continue, however, to supply some customers of long standing with certain special lines of rubber goods, their trade in pump valves, for example, still remaining extensive.

—The New York-Broadway Rubber Tire Co. is the name under which the distribution of tires will be conducted in the New York district in the future by the Goodyear Tire and Rubber Co., with offices at No. 253 West Forty-seventh street, New York, and No. 1311 Bedford avenue, Brooklyn. The office at No. 127 Duane street, New York, will not longer be maintained.

—Messrs. James Boyd & Co., dealers in mechanical rubber goods, No. 14 North Fourth street, Philadelphia, as usual have distributed to their friends in the trade a calendar for the year, arranged with spaces for daily memoranda, one leaf for each week. There are also facts and figures of use for permanent reference.

—The Beacon Falls Rubber Shoe Co. (Beacon Falls, Conn.) have taken on the manufacture of tennis shoes, and are marketing a line branded "Reliance."

—The Sweet Tire and Rubber Co. (Batavia, New York) are mentioned as having made a recent shipment of a carload of their carriage tires to one customer. The Sweet rubber tire machine is also in good demand.

—The Diamond Rubber Co.'s Cincinnati office has been removed from No. 2103 South street to No. 1559 Gest street.

—The result of the sale of the property of the American Tubing and Webbing Co. (Providence, Rhode Island) was reported in the last issue of this Journal. As a result of the difficulties with which the receivers of the company have had to contend in adjusting the claims of creditors, a decree was entered on January 15, by the Rhode Island supreme court, making C. Frank Parkhurst master of chancery for consideration of the various claims.

—The Merchants Rubber Co.—William Morse, president—jobbers of rubber footwear and clothing, long established at No. 72 Reade street, New York, announce that after April 1 their address will be at No. 139 Duane street.

—Mr. Frank D. Voorhees, son of President Voorhees, of the Voorhees Rubber Manufacturing Co. (Jersey City), will be connected hereafter with the New York branch of the company, at No. 150 Nassau street, dividing his time between that office and the factory.

—The Stamford Rubber Supply Co. (Stamford, Connecticut) are thoroughly remodeling their plant, besides the erection of a two story office building adjoining their main factory. The alterations will greatly facilitate the handling of the company's business, in a manner more satisfactory even than hitherto.

—The Froehlich Rubber Refining Co. (Philadelphia), the incorporation of which was reported in THE INDIA RUBBER WORLD July 1, 1903, on January 22 made a general assignment for the benefit of creditors, to the Equitable Trust Co. The deed of assignment was signed by Morris Froehlich, president, and attested to by Katherine Stier, secretary.

—The annual meeting of the shareholders of the American Hard Rubber Co. will be held at the office, Nos. 9-13 Mercer street, New York, on Tuesday, February 9, at 3 o'clock P. M.

—The *Mexican Herald* mentions the presence in the City of Mexico of a Mr. Green, traveling for a Boston rubber manufacturing company, who has been making trips out of that city into various parts of the republic.

—A young woman employed as cashier in the New York downtown branch of the Hartford Rubber Works Co., was arrested recently on a charge of having been a defaulter to a considerable amount. Manager R. P. Parker told the magistrate that he felt sure that the prisoner had been of good character, and had fallen under bad influences. The magistrate remarked, as he released the prisoner, that he thought the exposure and consequent suffering to her family had been punishment enough.

—The annual Sportsmen's Show this year at Madison Square Garden, New York, will be held from February 19 to March 5. It is probable that quite a display of bicycles will be made, together with other goods involving a greater or less use of rubber.

—Harry H. Shepard, manager of the National India Rubber Co. (Bristol, Rhode Island), and Frank Fish, foreman of the hose-making department, have been granted a patent on the manufacture of hose. It consists in bringing the ends of two separately vulcanized hose sections together upon a mandrel extending into the end of each, then applying a splicing strip overlapping both said ends, and subsequently vulcanizing said splice and expelling the mandrel by fluid pressure.

—The factory at Chiltonville, Massachusetts, formerly operated by the Colonial Rubber Co., and now used by a Boston mechanical goods concern as a rubber reclaiming plant, was damaged by fire on January 16, to an extent reported at \$15,000. The loss was covered by insurance. The principal structure was saved.

=Mr. R. M. Howison, of Howison & Co., London, is now on his annual visit to the States, his address being in care of R. E. Hofer, No. 112 Water street, Boston. Mr. Howison's firm are sole European agents for the Pennsylvania Rubber Co. (Jeannette, Pa.) and a specialty is made of tires and heel pads.

=The Philadelphia Rubber Works, the extensive rubber reclaiming concern, issue a circular requesting the trade to be exact in writing the name of the company, and to address them at No. 2419 South street, Philadelphia. It is mentioned that another company has a somewhat similar name, and there has been some confusion in the delivery of letters. Later the Philadelphia Rubber Works filed a suit against the other company referred to, the Philadelphia Rubber Co., to have them restrained from doing business under that name in the city.

=The Fawkes Rubber Co. (Denver), who are exploiting the Fawkes vehicle tire—now being manufactured for them at Cudahy, Wisconsin—have filed with the secretary of state of Colorado a certificate of increase of capital stock from \$50,000 to \$500,000.

=The plant of the new Atlantic Rubber Shoe Co. (Providence, Rhode Island) is reported to be practically complete, and the rubber footwear trade is in expectation of seeing the product of the factory on the market very soon.

INFRINGEMENT OF A TIRE PATENT ALLEGED.

SUIT was filed on January 18 in the United States circuit court at Pittsburgh, Pennsylvania, by the Rubber Tire Wheel Co. against the Continental Rubber Works, of Erie, Pa., and Theron R. Palmer, Alexander Jarecki, Charles Jarecki, and Charles S. Coleman, directors in the latter company, alleging infringement of a rubber tire patent. An injunction to prevent the defendants from making further use of the patent and damages are asked for.

THE STREAT PATENT IN COURT AGAIN.

JOHN C. WEBB of Boston brought suit in the United States circuit court in that city against Joseph J. Goldsmith, *et al.* (the Harvard Rubber Co.), to recover \$20,000 damages for alleged infringement of the George Streat patent (No. 260,063—June 27, 1882) relating to the manufacture of waterproof clothing. Webb based his suit upon an assignment, by Streat, after the patent had expired, of all claims for infringement by the defendants. Judge Brown, on January 21, in sustaining a demurrer filed by the defendants, held that Webb could not maintain an action for damages for patent infringement, as he was not a "patentee, assignee, or grantee" within the meaning of the statutes.==Streat's patent claims were (1) two fabrics so cemented together with waterproof rubber cement that "the compound material rendered waterproof without materially increasing the thickness" and (2) a *sewed* garment made of the same. In 1899 Streat filed suits against several manufacturers of mackintoshes, alleging infringement of his patent, but we have no record that any of these were followed up to a successful conclusion.

THE NEW COLORADO RUBBER.

RICHARD A. LEIGH, formerly connected with some of the leading mechanical rubber goods factories in the East, is mentioned by the Colorado newspapers as general superintendent of the Western Rubber Co., organized recently at Denver [See THE INDIA RUBBER WORLD, December 1, 1903—page 98] to extract rubber from the roots of a shrub growing wild in that region. Judging from the Colorado newspapers some people there are growing wild over the prospects of wealth from this new source, but Mr. Leigh's friends will wish him success in his new connection. Mr. Leigh, by the way, has become greatly improved in health during his residence in the West.

THE WHITMAN & BARNES SOUVENIR.

A PARTICULARLY handsome picture, entitled "Sheep in the Highlands," is being distributed by the Whitman & Barnes Manufacturing Co. from their general office, One Hundred and Twentieth street, Chicago. As the title indicates, the scene is laid in the mountains of Scotland. The animals are grouped in the foreground and are at rest. The leader, a big black fellow, stands on guard. In the distance may be seen a winding river and on either side of the animals tower high mountains. Floating clouds and a misty atmosphere tend to soften as well as bring out the beauty of the landscape. The picture is an exact copy in colors from the original painting, now the property of the company, executed by the famous Scotch artist W. Watson. The picture, 19" X 28½", bears no advertisement, and will be sent by mail to any address upon receipt of 50 cents.

ARRIVAL OF "BABETTE."

THE annual New Year's souvenir of The B. F. Goodrich Co. (Akron, Ohio) has reached THE INDIA RUBBER WORLD and is one of the most attractive that enterprising concern has ever issued. It is the head of a beautiful girl, done in excellent imitation of oil painting. The subject is "Babette," and the picture is a fitting companion to "Kate," "Dorothy," and the others on the list.

PERSONAL MENTION.

ARTHUR CORBIN GOULD, the founder and editor of *Shooting and Fishing*, of New York, who died on December 15, was a brother of Henry A. Gould, long prominent as a crude rubber merchant. The journal referred to has existed for twenty years, and in addition to editing it, Mr. Gould wrote several volumes on rifles and other arms, which gained for him reputation as an authority and led him to be consulted by military men, manufacturers of arms, and sportsmen, both at home and abroad.

=Mr. Charles R. Flint delivered an address before the chamber of commerce of Rochester, New York, on the evening of January 7, on "The United States; a Commercial World Power." The address was a strong plea for freer international trade. Mr. Flint said that while there is a growing sentiment in England in favor of retaliatory tariffs, there was reason to believe that country "would unite with the United States in working out the best industrial condition for the world at large—the free right to make, buy, and sell. As the bricks are taken off the top of the tariff walls, and they should be removed gradually, exchange of products will increase."

=Mr. W. F. Bowers, of the Bowers Rubber Co. (San Francisco), spent the holidays in his native city—Lynn, Massachusetts—where he arrived in time to be present on December 22, at the golden wedding of his parents, Mr. and Mrs. Wilder T. Bowers. Their ages are 80 and 73 years, respectively, and both have resided all their lives in Lynn. Mr. Bowers recently retired from business after a continuous connection for 52 years.==Mr. W. F. Bowers reports very active trade conditions on the Pacific coast, the rubber houses having done a good business throughout last year.

=Mr. John H. Flint, treasurer of the Tyer Rubber Co., has recently been elected president of the Andover (Mass.) Savings Bank. This financial institution, which has deposits of about \$3,500,000, is one of the largest and strongest in that locality. From its incorporation in 1835, until his retirement from active business in 1870, Mr. John Flint, father of the newly elected president, was treasurer of this bank.

=Workmen are tearing down the walls of the plant of the India Rubber Co., which was destroyed by fire in March last. The property has been purchased by a Pittsburgh company which will erect a plant for the manufacture of cutlery.

AMERICAN RUBBER GOODS EXPORTS.

OFFICIAL statement of values of exports of manufactures of India-rubber and Gutta-percha, for the month of December, 1903, and for the past five calendar years:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
December, 1903....	\$ 80,273	\$100,516	\$ 235,801	\$ 416,590
January-November.	777,361	890,835	2,276,179	3,944,375
Total, 1903.....	\$557,634	\$991,351	\$2,511,980	\$4,360,965
Total, 1902.....	738,257	1,065,592	2,011,905	3,815,754
Total, 1901.....	608,116	974,018	1,743,882	3,326,016
Total, 1900.....	528,382	721,085	1,559,049	2,808,516
Total, 1899....	(a)270,069	327,139	1,475,330	2,081,588

(a) Included in "All Other" prior to July 1, 1899.

IMPORTS INTO THE UNITED STATES.

	1901.	1902.	1903.
India-rubber goods.....	\$162,703	\$562,997	\$682,982
Gutta-percha goods.....	121,485	121,123	442,580
Total.....	\$581,188	\$684,120	\$1,125,562
Reexports.....	14,288	4,655	8,624
Net Imports....	\$566,900	\$679,465	\$1,116,938

AMAZON STEAM NAVIGATION CO.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The directors of the Amazon Steam Navigation Co., Limited, at their meeting to-day, have declared a half yearly dividend on account of the current year of 2 per cent. or 5 shillings per

share, free of income tax, payable on and after January 5, 1904. Also that the transfer books of this company will be closed from Saturday, December 19, to January 2, 1904, both days inclusive.

G. STREET & CO., LTD.

30, Cornhill, E. C., London, December 19, 1903.

THE Hon. Charles Foster, of Fostoria, Ohio, and president of the Pan-American Planters' Co., a rubber planting enterprise in Mexico, with offices in Chicago, died on January 10. He had served eight years as a member of congress from Ohio, two terms as governor of the state, and had been secretary of the treasury in President Harrison's cabinet.

MR. MAXWELL F. RIDDLE, treasurer of the Republic Development Co., and manager of the Obispo rubber plantation at Tuxtepec, Oaxaca, Mexico, has returned to the plantation.

A CONTEST having arisen between the Chicago city railway companies and their employes over the right of the latter to wear membership badges of their union while on duty, at a meeting of the Chicago Federation of Labor a resolution committing that body to the support of the railway employes was adopted, on motion of William T. Dunn, of Chicago Local No. 1, Amalgamated Rubber Workers' Union of America. Officials of the railway state that their attitude is due to the fact that employes not wearing the union badge have been attacked, and that rows over it have caused three deadly assaults and one death.

REVIEW OF THE CRUDE RUBBER MARKET.

THE price of Pará rubber is again on a dollar basis, as a result of an advance which has been gradual for the whole month past, though it was accentuated by the result of the recent large sale at Antwerp. The average advance for the month of the Pará grades on which quotations are given below was fully 12 per cent. A marked advance has been made also in Africans, amounting to an average of 7 per cent. on the grades listed in our report. The rise has been somewhat less on Centrals and East Indians, but all told the advance has been more general and more decided than is often to be recorded in a single month.

There is less talk at this time than was to be heard at the end of last summer about the influence of speculative manipulation of the market. It is generally considered that prices declined to too low a figure in December last, in view of the statistical position of the market and the activity of the manufacturers. The easing of prices at that time was the effect both of a reaction from the extreme high figures of September, and of reports from an increasing output from the Amazon region. The early prediction of a larger crop of Pará grades has been confirmed, our figures showing heavier receipts thus far at Pará than for the same date in the season in any preceding year. Stocks are exceptionally low, however, in all markets, and buying is active.

In the United States no previous winter has shown such continuous operation of the rubber shoe factories, or on so large a scale. The manufacturers of automobile tires have a busy season before them, in spite of assertions by some of our correspondents on another page that they were beginning the year with a season of comparative quiet. The manufacturers of mechanical goods in general are also busy, having recovered from

the slightly reduced demand for goods which they reported during the last weeks of 1903.

The consumption of rubber in the United States during last year was very much larger than during the preceding year, and the rate is not less now. Furthermore, the increased consumption in Great Britain, Germany, and France combined was equal to or greater than in the United States for the same period. The arrivals at Pará (including Caucho) have been:

	1900-01.	1901-02.	1902-03.	1903-04.
To December 31....	11,300	13,630	12,250	13,470
" January 31.....	13,740	16,490	14,650	a 16,730

[a—To January 27, 1904.]

Following is a statement of prices of Pará grades, one year ago, one month ago, and on January 30—the current date:

PARA.	Feb. 1, '03.	Jan. 1, '04.	Jan. 30.
Islands, fine, new.....	83@84	90@ 91	99@100
Islands, fine, old.....	88@89	@	@
Upriver, fine, new.....	86@87	93@ 94	104@105
Upriver, fine, old.....	91@92	96@ 97	None here
Islands, coarse, new.....	53@54	55@ 56	64@ 65
Islands, coarse, old.....	@	@	None here
Upriver, coarse, new.....	71@72	76@ 77	83@ 84
Upriver, coarse, old.....	@	@	85@ 86
Caucho (Peruvian) sheet.....	56@57	61@ 62	64@ 65
Caucho (Peruvian) ball.....	69@70	72@ 73	75@ 76

The market for other sorts in New York on which the advance has been rather less marked, is as follows:

AFRICAN.		Lopori strip, prime....	
Sierra Leone, 1st quality	90 @91	Ikelemba.....	90 @91
Massai, red.....	90 @91	Madagascar, pinky....	82 @83
Benguella.....	72 @73	CENTRALS.	
Cameroon ball.....	65 @66	Esmeralda, sausage....	72 @73
Accra flake.....	35 @36	Guayaquil, strip.....	62 @63
Accra buttons.....	None here	Nicaragua, scrap....	72 @73
Lopori ball, prime....	90 @91	Panama, slab.....	55 @56

Mexican, scrap	71 @72	EAST INDIAN.	
Mexican, slab	52 @53	Assam.....	80 @81
Mangabeira, sheet....	57 @58	Borneo.....	@

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.	6\$100	Upriver, fine.....	7\$150
Islands, coarse	3\$300	Upriver, coarse.....	5\$250
Exchange, 12½d.			

Last Manáos advices (January 28):

Upriver, fine.....	7\$200	Upriver, coarse.	5\$100
Exchange, 12½d.			

NEW YORK RUBBER PRICES FOR DECEMBER (NEW RUBBER).

	1903.	1902.	1901.
Upriver, fine.....	93@98	80@91	85@87
Upriver, coarse.	76@81	65@73	65@66
Islands, fine.	88@94	74@88	79@81
Islands, coarse	54@57	49@60	48@51
Cametá, coarse.....	54@57	54@61	55@51

In regard to the financial situation, Albert B. Beers, (broker in India-rubber, No. 58 William street, New York) advises us:

"During January the money market has eased very much, and the demand for commercial paper has improved, rates having dropped from 7 per cent. for the best rubber paper to 5½ @ 6 per cent. for such, and 6 @ 6½ per cent. for the names not so well known."

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.					
	Fine and Medium.	Coarse.	Total	1903.	1902.	1901.
Stocks, November 30..	32	0 =	32	171	535	
Arrivals, December.....	1032	470 =	1502	1322	1019	
Aggregating.....	1064	470 =	1534	1493	1554	
Deliveries, December.....	1008	470 =	1478	1421	1070	
Stocks, December 31..	56	0 =	56	72	484	

	PARÁ.			ENGLAND.		
	1903.	1902.	1901.	1903.	1902.	1901.
Stocks, Nov. 30...tons	195	155	410	370	1200	885
Arrivals, December...	3185	2990	3545	1100	785	1241
Aggregating.....	3380	3145	3955	1470	1985	2126
Deliveries, December.	3010	2780	3805	925	1100	827
Stocks, Dec. 31..	370	365	150	545	885	1200

	1903.	1902.	1901.
World's visible supply, December 31....tons	2979	3188	4432
Pará receipts, July 1 to December 31.....	12,540	11,576	12,689
Pará receipts of Caucho, same dates.....	960	694	946
Afloat from Pará to United States, Dec. 31..	908	855	1078
Afloat from Pará to Europe, December 31...	1100	1011	1120

United States Crude Rubber Imports.

[OFFICIAL STATEMENT.]

FROM—	1901.	1902.	1903.
United Kingdom....pounds	6,802,372	7,604,134	8,556,972
Germany.....	1,832,558	2,379,353	2,176,346
Other Europe.....	9,400,127	7,220,369	9,245,077
Central America.....	1,247,517	1,062,184	1,133,814
Mexico.....	267,565	263,181	286,260
West Indies and Bermuda...	42,844	47,335	16,286
Brazil.....	33,719,709	30,504,703	31,950,915
Other South America.....	1,336,131	1,230,902	1,759,904
East Indies.....	455,870	509,609	612,345
Other countries.....	38,117	29,467	6,201
Total.....pounds	55,142,810	50,851,257	55,744,120
Value.....	\$28,120,218	\$25,158,591	\$35,152,642
Average Value per pound...	50.9 cents.	49.4 cents.	63.1 cents.

Gutta-Percha.

WEISS & Co. (Rotterdam) report exports from Singapore for the first eleven months of five years past as follows:

	1899.	1900.	1901.	1902.	1903.
Tons.....	6568	5740	5214	3898	3018

Bordeaux.

R. HENRY favors us with details from which has been compiled the statements following:

CAOUTCHOUC ARRIVALS FOR 1903.

		kilos
Soudan.....	78%	679,455
Twists.....	78%	
Cassamance.....	45%	149,972
A.....	45%	
B.....	20%	
Conakry.....	10%	147,010
Lahou and Bassam.....	40%	60,980
Lumps.....	40%	
Twists.....	10%	
Congo.....	20%	51,200
Mayumba.....	20%	
Other sorts.....	40%	
Mexico and Colombia.....		3,070
Java.....		2,250
Madagascar.....		3,710
New Caledonia.....		350

Total.....	kilos	1,097,997
Total, 1902.....		664,900
Total, 1901.....		348,000

ARRIVALS BY MONTHS, 1903 (IN KILOS)

January.....	63,142	May.....	103,820	September.....	103,500
February.....	94,950	June.....	63,200	October.....	68,300
March.....	121,300	July.....	49,965	November.....	97,470
April.....	97,300	August.....	150,400	December.....	84,650

PRICES FOR 1903—FRANCS PER KILO.

	Minimum.	Maximum.
Conakry niggers, red, prime.....	8.25@8.50	10.50@10.70
Soudan niggers, prime.....	8. @8.25	9.50@10.15
Soudan twists.....	7.55@7.75	9.50@9.75
Cassamance, A.....	6.90@7.	7.80@7.90
Cassamance, A. M.....	6.30@6.40	7. @7.10
Cassamance, B.....	5.50@5.60	6.10@6.30
Bassam lumps.....	4.95@5.	6.50@6.65
Bassam—Lahou cakes.....	4.85@6.90	7.30@8.45
Madagascar—Tamatave.....		9. @9.50
Madagascar—Majungs.....		6.75@7.75
Madagascar—niggers.....		5.25@6.25
Mayumba.....	4.25@4.50	6.70

London and Liverpool.

S. FIGGIS & Co. (London) favor us with their annual review of the rubber market for 1903. In their last annual report they noted the falling off in Medium sorts—i.e., other than Pará grades. The past year has shown increased arrivals of these, but the increase in consumption still leaves reduced stocks.

They estimate a total output of Africans of 11,920 tons, against 9839 tons in 1902. Benguela shows 1450 tons against 560; Loanda, 980 tons against 705; Congo sorts, 5600 tons against 5300. Considerable increase from Gold Coast, Accra, Lagos, etc., with only fair receipts from Cameroons, Sierra Leone, Gaboon, etc., and very small receipts from Senegal. Greatly increased supplies from Soudan; East Coast Africa about average; Nyassaland rather more; Lamu fair supply. More from Madagascar.

Ceylon sent much more; very nice thin sheet from Pará seed sold well, also scrap negrohead sold readily, and clean soft Ceará strips. Cultivation should be encouraged, as we can consume what can be produced. We have seen small lots grown from Pará seed in Malay States

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound; again no change of importance to be noted:

Old Rubber Boots and Shoes—Domestic.....	6½ @ 7
Do —Foreign.....	6¼ @ 6½
Pneumatic Bicycle Tires.....	4 @ 4½
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	8¾ @ 9
Heavy Black Rubber.....	4¼
Air Brake Hose.....	2½ @ 2¾
Fire and Large Hose.....	2
Garden Hose.....	1½
Matting.....	1

of nice quality and well liked. Imports should be encouraged. It sells very readily on basis of Ceylon prices.

East Indies.—*Rangoon* sent more; also *Penang*. *Borneo* moderate supply and not readily sold. *Indo China* sold better, and better liked.

Balata.—*Block* in fair supply; first eight months prices firm and up to 2s. 1½d.; during later months stocks have accumulated and prices are lower; nominal value now 1s. 8½d. *Sheet* supply has increased during the year, and has sold well, but prices are now lower; spot value of *Pile I* is 2s. 4d.

Gutta Percha.—There has been very little doing during the year. Stocks have been firmly held, but demand is very slow and prices all round are lower.

ENGLAND'S IMPORTS FOR THE YEAR.

Pará sorts.....tons	10,630	Madagascar.....tons	83
Peruvian.....	2,216	Rangoon and Assam.....	88
Mollendo.....	148	Penang and Borneo.....	101
Central American, Ceará, and Pernambuco.....	1,798	Penang.....	296
African.....	3,890	Various.....	1
Zanzibar and Mozambique.....	213	Total.....	19,464

EDMUND SCHLUTER & Co. (London and Liverpool) have favored us with their chart of "Annual India-Rubber Statistics" for 1903, showing not only the fluctuations in prices of the leading grades, but also the London and Liverpool stocks of rubber of all kinds at the end of each month, not only for 1903 but for the four years preceding. There is given also a detailed statement of the visible supplies of Pará rubber at the end of each month since the beginning of 1899. The chart is mounted for convenient use in the counting house of the rubber man.

MESSRS. HECHT, LEVIS & KAHN, India-rubber merchants, of London and Liverpool, announce the admission to their firm, as a partner, from January 1, of Mr. Robert Kahn.

EDWARD TILL & Co. [December 31] report stocks:

	1903.	1902.	1901.
LONDON { Pará sorts.....tons	—	—	—
{ Borneo.....	32	55	144
{ Assam and Rangoon.....	4	2	52
{ Other sorts.....	224	175	442
Total.....	260	232	638
LIVERPOOL { Pará.....	546	894	1302
{ Other sorts.....	630	456	854
Total, United Kingdom.....	1436	1582	2794
Total, December 1.....	1185	2083	2525
Total, November 1.....	866	2464	2802
Total, September 1.....	1364	2731	2736
Total, August 1.....	1781	3053	2944
Total, July 1.....	2235	3595	3128
Total, June 1.....	2248	3687	3502

PRICES PAID DURING DECEMBER.

	1903.	1902.	1901.
Pará fine, hard.. . . .	3/10¾@4/1	3/4¾@3/10	3/7
Do soft.....	3/9¾@3/11	3/1½@3/8¼	3/4¾@3/6¼
Negroheads, scrappy..	2/3¼@3/3½	2/9@3/1	2/7@2/9
Do Islands..	2/4½@2/5	2/1½@2/6½	2/0½@2/1
Bolivian.....	4/-	3/7@3/10	3/7¼@3/9

Lisbon Rubber Receipts.

[Reported by MARTIN WEINSTEIN & Co.]

	1899.	1900.	1901.	1902.	1903.
Benguella niggers....tons	1879	1614	1460	648	1556
Loanda niggers.....	885	678	754	803	1051
Congo thimbles.....	264	206	145	95	126
Other sorts.....	30	48	71	85	109
Total.....	3058	2546	2430	1631	2842

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We entered the year with a stock of 611 tons—or 47 tons less than last year. Imports during the year just closed were as follows:

Congo sorts..... 5180 tons, against 4993 tons in 1902.
Other sorts..... 546 " " 411 " "
Total..... 5726 " " 5404 " "

Consequently there is practically no change in the quantities

exported from the Congo, in spite of improved facilities for reaching the seaboard.

The next large sale here will take place on January 29, when about 693 tons—mainly Congo sorts—will be exposed. Among the more important lots will be the following, with the brokers' estimations:

Tons.	Francs	Tons.	Francs.
31 Lapor I.....	9.10	22 Aruwimi.....	8.15
26 Lapor II.....	7.	12 Kasai red I.....	10.07½
28 Upper Congo ball.....	9.40	15 Kasai—Loanda.....	9.30
13 Wamba thimbles, red....	4.	31 Kasai—Sankuru.....	8.80
72 Uelé strips.....	8.50	16 Kasai black I.....	9.50
24 Mongalla strips.....	9.15	7 Equateur I.....	9.50

There are included also some 12 tons of French Congo rubber; about 5 tons Benguella sorts; 19 tons Mozambique, and 3 tons Madagascar.

No sale of importance has occurred since December 16, as reported in these pages.

C. SCHMID & CO., SUCRS.

Antwerp, January 15, 1904.

[FROM reports which have reached us through other channels it appears that the prices realized at the above sale were far above what New York rubber men, at least, had expected. As a result, the amount of the rubber sold that was secured for American consumption was much less than had been counted on. It is stated that one New York house, that instructed its Antwerp correspondent to bid on 125,000 pounds at an advance of 5 cents per pound over December prices, failed to secure any of the rubber.—On another page will be found the annual review of the Congo rubber situation by Messrs. Grisar & Co., of Antwerp.]

ANTWERP IMPORTS OF RUBBER.

YEAR.	Congo State.	Other sources.	Total.
1896.....kilos	1,106,375	9,500	1,115,875
1897.....	1,557,861	121,293	1,679,154
1898.....	1,734,305	280,286	2,014,591
1899.....	2,992,414	410,416	3,402,880
1900.....	4,902,003	796,032	5,698,035
1901.....	5,417,456	431,746	5,849,202
1902.....	4,992,954	411,031	5,403,985
1903.....	5,180,401	540,082	5,726,483

COMPARATIVE PRICES—EXTREMES.

[In Francs per Kilogram.]

GRADES.	1901.	1902.	1903.
Kasai, red, I.....	8.25-9.	7.50 -8.75	8.75-10.75
Equateur, I.....	7.25-8.50	6.80 -8.75	8.75-10.32½
Lopori, I.....	7.25-8.50	6.80 -8.75	8.75-10.32½
Uelé.....	6.85-7.45	5.42½-8.15	8.15-10.15
Aruwimi.....	5.50-7.50	5.16 -8.15	8.15-10.15
Upper Congo, ordinary..	7.10-7.50	6.65 -7.95	7.95-10.20
Lower Congo, thimbles..	2.80-4.02½	1.70 -4.25	4.25-6.00
*Fine Pará.....	3s. 6½d.-3s. 10d.	2s. 11½d.-3s.	3s. 8d.-4s. 8½d.

[* In English money, per Pound.]

[10 Francs per Kilogram=87½ cents per Pound.]

ANTWERP RUBBER STATISTICS FOR DECEMBER.

DETAILS.	1903.	1902.	1901.	1900.	1899.
Stocks, Nov. 30.kilos	680,142	185,961	843,301	1,064,646	179,778
Arrivals, December.	638,158	799,236	204,920	170,135	319,351
Congo sorts.....	599,445	760,150	182,525	151,726	269,879
Other sorts.....	38,213	39,086	22,395	18,409	49,472
Aggregating....	1,318,300	985,197	1,048,221	1,234,781	499,129
Sales, December....	707,400	327,092	633,512	620,742	207,138
Stocks, Dec. 31..	610,900	658,105	414,709	614,039	291,991
Arrivals since Jan. 1	5,726,483	5,403,985	5,849,202	5,698,035	3,402,880
Congo sorts.....	5,180,401	4,992,954	5,417,456	4,902,003	2,881,596
Other sorts.....	546,082	411,031	431,746	796,032	521,284
Sales since Jan. 1..	5,773,688	5,160,589	6,048,442	5,375,987	3,374,229

RUBBER ARRIVALS AT ANTWERP.

DEC. 30.—By the *Albertville*, from the Congo:

Société A B I R.....	kilos	73,000
Comptoir Commercial Congolais.....		1,000
Bunge & Co.....(Société Générale Africaine)		184,300
Do.....(Société Anversoise)		41,300
Do.....(Société "La Kotto")		2,000
Do.....(Sultanats du Haut Obangi)		25,500
Société Coloniale Anversoise.....(Cie. du Kasai)		54,000
Do.....(Cie. de Lomami)		12,000
Do.....(Belge du Haut Congo)		6,000
Comptoir des Produits Coloniaux.....		1,600
Do.....(Cie. de la N'Goko)		4,600
Do.....(Cie. des Produits de la Sangha)		300
Do.....(Cie. de Ekela & Kadei Sangha)		9,700
Charles Dethier.....(La Haut Sangha)		25,000
M. S. Cols.....		1,200
Do.....(Société Baniembe)		1,100
Do.....(Société L'Ikelemba)		400
Société Equatoriale Congolaise.....		1,000
W. Mallinckrodt & Co.....(Alimaïenne)		11,400
Cie. Commerciale des Colonies.....		500
		455,900

Rotterdam Rubber Statistics.

[Supplied by WEISE & Co.]

INDIA-RUBBER ARRIVALS (KILOS).

Thimbles, red.....	99,000	Soudan.....	66,600
Congo ball.....	15,500	All other.....	13,200
Kassai, red.....	146,600		
Kassai, black.....	43,200	Total, 1903.....	799,300
Upper Congo.....	370,300	Total, 1902.....	991,700
Sierra Leone.....	19,900	Total, 1901.....	853,250
Mozambique.....	9,400	Total, 1900.....	877,450
Java and Sumatra.....	15,600	Total, 1899.....	804,750

	1904.	1903.	1902.	1901.	1900.
Stocks, January 1....	64,000	8,100	67,300	80,600	38,900

BALATA ARRIVALS (KILOS).

	1903.	1902.	1901.	1900.	1899.
Surinam sheet ...	281,000	244,500	211,950	161,600	95,200
Venezuela block ..	22,000	30,700	31,450	23,500	52,200
Total.....	303,000	275,200	243,400	185,100	147,400
Stocks, end year	3,700				5,000

GUTTA-PERCHA (TONS).

	1903.	1902.	1901.	1900.	1899.	1898.
Stocks first of year.....	218	263	185	307	180	130
Arrivals during year.....	148	267	314	280	495	265
Aggregating.....	366	530	499	587	675	395
Sales during year.....	172	312	236	402	368	215
Stocks end of year...	194	218	263	185	307	180

Rubber Production of Para State.

WE are again able to present some details of the production of rubber in the state of Grão Pará, as distinguished from that derived from sources up the Amazon, but included in the statistics of shipments from Pará. The figures here relate (1) to the total arrivals at Pará during the last three calendar years, (2) to the share which was produced in Pará state, and (3) the percentage of the total produced in Pará—the figures including Caucho:

	Total.	Pará State.	Per cent. Pará.
1901... ..	29,930	9,866	32.9 %
1902... ..	28,620	10,566	36.9 %
1903... ..	31,090	11,017	35.4 %

[Arrivals for June, 1903, estimated by us at 500 tons.]

The interest which these figures have for the trade is the indication which they afford of the permanence of the *Hevea* rubber supply. Pará state, it will be remembered, was the district in which this kind of rubber was first gathered, and for a long time was the sole source of supply. Later, when Upriver rubber came into the market, from the regions tributary to Manáos, an impression prevailed that the exploiting of new fields was due to the exhaustion of rubber in the Pará or "Islands" district. This, however, is not the case; more rubber was needed, and the rubber field has been widened. But the state which was first to yield *Hevea* rubber, and the one in

which the forests have been longest worked, is now yielding more than ever before. During the last six months the arrivals in market from Pará state compare with the same period of the three preceding years as follows:

	1900.	1901.	1902.	1903.
Tons.....	5521	6149	5295	6403

The state of Pará of late has begun the export of Caucho, the arrivals in market having increased from 66 tons in 1901 to 142 tons in 1902 and 366 tons in 1903. During the last six months arrivals of Caucho amounted to 98 tons, against 64 tons in the same period of 1902 and 4 tons in July-December, 1901.

These new supplies of Caucho are drawn from the river Tapajoz, where the development first began, and more largely from the Tocantins. Our Pará correspondent reported in July last: "From the latter river we shall not have any supplies for some months to come, due to low water, but from the Tapajoz there are always shipping facilities." If the same rate of increase should be shown by the Tocantins this spring as during the past two years, several hundred tons of Caucho should come out with the rise of the river.

Rubber Receipts at Manaos.

DURING December and the first six months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	DECEMBER.			JULY-DECEMBER.		
	1903.	1902.	1901.	1903.	1902.	1901.
Rio Purús.....	588	467	468	2201	1915	2339
Rio Madeira.....	336	166	279	1544	1300	1610
Rio Jurua.....	553	337	408	1435	789	1593
Rio Javary—Iquitos...	375	441	290	1445	995	885
Rio Solimões.....	160	324	275	466	922	1047
Rio Negro.....	105	109	66	154	199	95
Total....	2117	1844	1786	7245	6120	7569
Caucho.....	428	185	280	900	600	1096
Total.....	2545	2029	2066	8145	6720	8665

THE firm Witt & Co. underwent a change at the end of the year. The old firm was composed of Nicoláo Henrique Witt, Cezar José de Figueiredo, and José de Figueiredo, with an interest held by the Para house of Frank da Costa & Co. The firm as reconstituted consists of N. H. Witt and Waldemar Scholz.

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

January 2.—By the steamer *Benedict*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
A. T. Morse & Co.....	188,500	24,400	166,000	1,400=	380,300
Poel & Arnold.....	131,000	27,500	42,800	10,200=	211,500
United States Rubber Co.	83,600	17,800	10,100	24,700=	136,200
New York Commercial Co.	62,500	11,100	12,900	....=	86,500
William Wright & Co....	13,800	1,700	19,000	100=	34,600
G. Amsinck & Co.....	14,900	3,100	5,700	600=	24,300
Lionel Hagenaers & Co..	20,200	....	2,700	....=	22,900
Edmund Reeks & Co....	4,100	....	....	7,300=	11,400
Hagemeyer & Brunn....	4,400	1,700	900	....=	7,000
Thomsen & Co.....	5,500	400	1,400	....=	7,300
Total.....	528,500	87,700	261,500	44,300=	921,000

January 11.—By the steamer *Dunstan*, from Manáos and Pará:

New York Commercial Co.	236,100	68,300	62,600	....=	367,000
A. T. Morse & Co.....	185,200	29,400	65,500	....=	280,100
United States Rubber Co.	76,300	20,400	52,400	67,600=	216,700
Poel & Arnold.....	100,100	16,000	41,500	3,800=	161,400
William Wright & Co....	11,400	1,100	34,200	....=	46,700
Hagemeyer & Brunn....	11,900	....	2,800	....=	14,700
Lionel Hagenaers & Co..	9,600	....	2,800	....=	12,400

Total 630,600 135,200 261,800 71,400=1,099,000

January 19.—By the steamer *Seguranca*, from Mollendo:

	Fine.	Coarse.	Caucho.
Chicago Bolivian Rub. Co.	23,000	....	2,200
Flint & Co.....	....	....	8,300

January 23.—By the steamer *Grangense*, from Manáos and Pará.

Poel & Arnold	180,600	40,400	80,600	7,100	314,700
United States Rubber Co.	129,700	26,600	73,200	37,600	267,100
A. T. Morse & Co.	89,200	17,300	167,700	.....	274,200
New York Commercial Co.	40,900	51,100	146,400	.....	238,400
William Wright & Co.	39,000	3,600	35,500	.....	78,100
Czarnikow, McDougal & Co.	30,600	6,500	1,100	.....	38,200
Lawrence, Johnson & Co.	10,700	2,500	2,500	.....	15,700

Lionel Hagenaers & Co.	15,500	.....	3,300	.....	18,800
Hagameyer & Brunn	10,200	1,900	2,400	.....	14,500
Samuels, Hermanos & Cummings	3,800	.....	3,800	.....	7,600

Total .. 550,200 155,900 516,500 44,700=1,267,300

[NOTE.—The steamer *Basil*, due at New York on February 1, has on board 675 tons of Rubber and 35 tons of Cauchou.]

PARA RUBBER VIA EUROPE.

None Reported.

OTHER ARRIVALS AT NEW YORK

CENTRALS.

		POUNDS.
DEC. 28.—By the <i>Comus</i> =New Orleans:		
A. T. Morse & Co.	1,500	
Eggers & Heinlein	500	2,000
DEC. 29.—By the <i>Alliance</i> =Colon:		
Smithers, Nordenholt & Co.	4,400	
Livingstone & Co.	3,900	
E. B. Strout	2,200	
Meyer Hecht	2,500	
L. N. Chemedlin & Co.	2,500	
Harburger & Stack	1,000	
E. Steiger & Co.	1,000	
A. N. Rotholz	600	
For Brussels	3,200	21,300

DEC. 29.—By <i>Valencia</i> =Greytown, etc:		
G. Amsinck & Co.	9,000	
E. B. Strout	1,600	
Andreas & Co.	500	
Kunhardt & Co.	1,300	
Isaac Brandon & Bros.	1,300	
Isaac Kuble & Co.	1,000	14,700

DEC. 31.—By the <i>Alene</i> =Sav. inilla:		
Hierapolls & Co.	11,000	
Roldan & Van Sickle	500	
Graham, Hinkley & Co.	1,000	
Isaac Brandon & Bros.	600	
Bartling & De Leon	400	13,500

DEC. 31.—By the <i>Thespis</i> =Bahia:		
J. H. Rossbach & Bro.	18,500	
Hirsch & Kaiser	18,000	36,500

JAN. 4.—By the <i>Proteus</i> =New Orleans:		
A. T. Morse & Co.	6,000	
Manhattan Rubber Mfg. Co.	3,000	
A. N. Rotholz	3,000	12,000

JAN. 5.—By the <i>Yucatan</i> =Colon:		
Hirzel, Feltman & Co.	19,000	
G. Amsinck & Co.	15,200	
Dumarest & Co.	3,300	
Livingstone & Co.	2,500	
Meyer Hecht	2,600	
Piza, Nephews Co.	2,300	
A. Santos & Co.	2,000	
Mecke & Co.	1,900	
E. B. Strout	1,600	
American Trading Co.	1,400	
Isaac Brandon & Bros.	1,300	
Roldan & Van Sickle	1,000	
Silva Bussenius & Co.	1,100	
H. Marguardt & Co.	1,100	
Lawrence Johnson & Co.	900	
Eggers & Heinlein	800	
Andreas & Co.	700	
Kunhardt & Co.	700	
Lawman & Kemp	500	
E. Scheitlin Co.	500	
R. G. Barthold	200	
E. Steiger & Co.	300	
Graham, Hinkley & Co.	300	
Samuels & Cummings	200	
A. D. Straus & Co.	200	61,600

JAN. 11.—By the <i>Comus</i> =New Orleans:		
Eggers & Heinlein	2,500	
A. T. Morse & Co.	2,500	5,000

JAN. 12.—By the <i>Yumuri</i> =Mexico:		
George A. Alden & Co.	10,600	
H. Marguardt & Co.	2,500	
E. N. Tibbals & Co.	200	
Samuels & Cummings	100	13,400

JAN. 12.—By the <i>Allegheny</i> =Carthage:		
Isaac Brandon & Bros.	3,300	
American Trading Co.	700	
For Hamburg	1,500	5,500

JAN. 13.—By the <i>City of Washington</i> =Colon:		
G. Amsinck & Co.	8,200	
Hirzel, Feltman & Co.	8,000	
Meyer Hecht	4,000	
Isaac Brandon & Bros.	2,000	
L. N. Chemedlin & Co.	2,000	
Smithers, Nordenholt & Co.	1,000	
National Sewing Machinery Co.	800	
For Brussels	4,200	30,200

JAN. 19.—By the <i>Seguranca</i> =Colon:		
Hirzel, Feltman & Co.	16,000	
G. Amsinck & Co.	14,500	
Meyer Hecht	6,000	

CENTRALS—Continued.

E. B. Strout	4,500	
American Trading Co.	3,100	
Roldan & Van Sickle	3,000	
D. A. De Lima & Co.	2,600	
Livingstone & Co.	2,600	
Dumarest & Co.	3,900	
L. N. Chemedlin & Co.	1,700	
A. Santos & Co.	1,400	
Frame & Co.	1,200	
Lawrence Johnson & Co.	1,200	
De Sola Lobo & Co.	800	
R. G. Barthold	600	
Isaac Brandon & Bros.	600	
Kunhardt & Co.	400	
J. Menendez & Co.	300	64,400

JAN. 19.—By the <i>Virgil</i> =Bahia:		
J. H. Rossbach & Bros.	16,000	
Hirsch & Kaiser	13,000	29,000

JAN. 20.—By the <i>Siberia</i> =Greytown:		
E. B. Strout	2,000	
Andreas & Co.	500	2,500

JAN. 20.—By the <i>Armenian</i> =Liverpool:		
Eggers & Heinlein	7,000	

JAN. 23.—By the <i>El Cut</i> =New Orleans:		
A. N. Rotholz	7,500	
George A. Alden & Co.	4,500	12,000

AFRICANS.

DEC. 26.—By the <i>Cedric</i> =Liverpool:		
George A. Alden & Co.	15,000	
A. T. Morse & Co.	14,000	
Poel & Arnold	33,000	62,000

DEC. 28.—By the <i>Etruria</i> =Liverpool:		
A. T. Morse & Co.	14,600	
Poel & Arnold	7,000	
United States Rubber Co.	7,000	28,000

DEC. 31.—By the <i>Majestic</i> =Liverpool:		
A. T. Morse & Co.	35,000	
United States Rubber Co.	20,000	
Joseph Cantor	7,500	62,500

JAN. 2.—By the <i>Pennsylvania</i> =Hamburg:		
A. T. Morse & Co.	16,000	
Henry A. Gould Co.	3,000	18,000

JAN. 6.—By the <i>Ivernia</i> =Liverpool:		
George A. Alden & Co.	11,500	
A. T. Morse & Co.	7,000	
William Wright & Co.	7,000	
Earle Brothers	6,500	32,000

JAN. 8.—By the <i>Vaderland</i> =Antwerp:		
George A. Alden & Co.	118,000	
A. T. Morse & Co.	15,000	
Rubber Trading Co.	6,000	139,000

JAN. 8.—By the <i>Georgina</i> =Lisbon:		
United States Rubber Co.	158,000	

JAN. 11.—By the <i>Celtic</i> =Liverpool:		
A. T. Morse & Co.	24,000	
Poel & Arnold	18,000	
William Wright & Co.	10,000	52,000

JAN. 11.—By the <i>Peninsular</i> =Lisbon:		
George A. Alden & Co.	45,000	

JAN. 11.—By the <i>St. Andrews</i> =Antwerp:		
Joseph Cantor	56,000	

JAN. 11.—By the <i>Umbria</i> =Liverpool:		
Poel & Arnold	14,000	
George A. Alden & Co.	11,500	
A. T. Morse & Co.	10,000	35,500

JAN. 11.—By the <i>Patricia</i> =Hamburg:		
A. T. Morse & Co.	18,000	
Rubber Trading Co.	2,000	20,000

JAN. 14.—By the <i>Tenonic</i> =Liverpool:		
United States Rubber Co.	7,000	
A. T. Morse & Co.	8,000	
Rubber Trading Co.	2,000	17,000

JAN. 16.—By the <i>Lucania</i> =Liverpool:		
George A. Alden & Co.	35,000	
Poel & Arnold	35,000	
United States Rubber Co.	25,000	
William Wright & Co.	5,000	100,000

JAN. 20.—By the <i>Turcoman</i> =Antwerp:		
A. T. Morse & Co.	18,000	
Joseph Cantor	35,000	
Rubber Trading Co.	10,000	
Robinson & Tallman	9,000	72,000

AFRICANS—Continued.

JAN. 21.—By the <i>Amsterdam</i> =Rotterdam:		
A. T. Morse & Co.	22,000	

JAN. 20.—By the <i>Kronland</i> =Antwerp:		
A. T. Morse & Co.	30,000	

JAN. 23.—By the <i>Cedric</i> =Liverpool:		
A. T. Morse & Co.	34,000	
United States Rubber Co.	11,000	
Earle Brothers	3,500	48,500

EAST INDIAN.

JAN. 11.—By the <i>New York</i> =London:		
Poel & Arnold	31,000	
A. T. Morse & Co.	1,000	32,000

JAN. 18.—By the <i>Seneca</i> =Singapore:		
Robert Brans & Co.	25,000	
Poel & Arnold	16,000	
William Wright & Co.	11,000	
Rubber Trading Co.	20,000	72,000

JAN. 25.—By the <i>Richmond Castle</i> =Singapore:		
To order	22,500	
Poel & Arnold	9,000	
William Wright & Co.	15,000	
Rubber Trading Co.	4,600	51,000

PONTIANAK.

JAN. 18.—By the <i>Seneca</i> =Singapore:		
William Wright & Co.	250,000	
J. H. Recknagel & Co.	60,000	
Heabler & Co.	150,000	
George A. Alden & Co.	65,000	515,000

JAN. 25.—By the <i>Richmond Castle</i> =Singapore:		
William Wright & Co.	520,000	
Poel & Arnold	145,000	
Robert Brans & Co.	90,000	
Heabler & Co.	55,000	810,000

GUTTA-PERCHA AND BALATA.

JAN. 2.—By the <i>Pennsylvania</i> =Hamburg:		
To order	8,000	

JAN. 11.—By the <i>Patricia</i> =Hamburg:		
To order	13,500	
Earle Brothers	2,500	16,000

JAN. 25.—By the <i>Richmond Castle</i> =Singapore:		
Poel & Arnold	8,000	

BALATA.

DEC. 31.—By the <i>Maracaibo</i> =Trinidad:		
G. Amsinck & Co.	1,000	
George A. Alden & Co.	500	1,500

JAN. 7.—By the <i>Piemonte</i> =Trinidad:		
George A. Alden & Co.	9,000	
Eggers & Heinlein	1,000	10,000

JAN. 11.—By the <i>Patricia</i> =Hamburg:		
George A. Alden & Co.	2,500	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—DECEMBER.

Imports:	POUNDS.	VALUE.
India-rubber	4,631,067	\$3,023,564
Gutta-percha	14,800	3,641
Gutta-jelutong (Pontianak)	767,037	21,661

Total..... 5,412,904 \$3,048,866

Exports:	POUNDS.	VALUE.
India-rubber	126,720	\$ 88,779
Reclaimed rubber	95,115	10,898
Rubber Scrap Imported	1,333,081	78,369

BOSTON ARRIVALS.

DEC. 15.—By the <i>Vaderland</i> =Antwerp:		
George A. Alden & Co.—African	118,197	

DEC. 22.—By the <i>Columbian</i> =London:		
George A. Alden & Co.—East Indian	8,557	

DEC. 22.—By the <i>Vaderland</i> =Antwerp:		
George A. Alden & Co.—African	63,777	

DEC. 29.—By the <i>Sagamore</i> =Liverpool:		
George A. Alden & Co.—African	4,786	

Total..... 195,267

[Value, \$435,676.]

DECEMBER EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Adelbert H. Alden.....	145,275	40,982	84,015	—	270,272	97,380	4,086	27,200	13,549	142,215	412,487
Frank da Costa & Co.....	40,210	4,584	154,002	—	198,886	139,374	9,434	48,032	—	196,840	395,726
Emok, Schrader & Co.....	—	—	57,280	—	57,280	187,340	13,200	73,220	14,216	288,036	345,316
Neale & Staats.....	2,352	336	37,920	—	40,608	40,200	5,376	1,324	70	52,970	93,578
J. Marques & Co.....	12,277	457	2,503	—	15,237	12,003	869	2,070	—	15,542	30,779
Denis Crouan & Co.....	8,457	675	2,868	—	12,000	—	—	13,933	—	13,933	25,933
B. A. Antunes & Co.....	2,720	984	1,792	312	5,808	14,960	2,950	1,188	—	19,098	24,906
Pires, Teixeira & Co.....	18,622	—	3,303	—	21,925	—	—	—	—	—	21,925
Singlehurst Brocklehurst & Co.	—	—	—	—	—	15,363	3,745	2,323	—	21,431	21,431
R. Suarez & Co.....	—	—	—	—	—	12,433	2,117	150	—	14,700	14,700
Sundry small shippers.....	—	—	2,539	—	2,539	2,848	387	509	—	3,744	6,283
Direct from Iquitos.....	1,937	—	—	3,642	5,579	152,616	8,743	61,190	155,556	378,105	383,684
Direct from Manaos.....	637,943	134,728	108,848	54,940	936,459	377,333	79,801	94,279	64,073	615,486	1,551,945
Total for December.....	869,793	182,746	455,160	58,894	1,566,593	1,057,850	130,768	326,018	247,464	1,762,100	3,328,693
Total for January Nov.....	6,378,270	1,466,099	4,538,916	1,101,475	13,484,760	8,088,442	1,035,588	2,321,413	2,819,897	14,265,340	27,750,100
TOTAL SINCE JANUARY 1.....	7,248,063	1,648,845	4,994,076	1,160,369	15,051,353	9,146,292	1,166,356	2,647,431	3,067,361	16,027,440	31,078,793

EXPORTS OF INDIA-RUBBER FROM MANAOS DURING 1903.

BY COURTESY OF WITT & CO. [WEIGHTS IN KILOGRAMS.]

EXPORTERS.	NEW YORK.					LIVERPOOL.					HAVRE AND HAMBURG.					TOTAL.
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Dusendtschön & Co.....	1,364,822	439,326	393,147	328,246	2,525,541	1,646,523	217,638	323,150	650,551	2,837,862	319,227	37,394	33,724	46,430	436,775	5,800,178
Witt & Co.....	1,300,261	267,154	268,397	376,971	2,212,783	728,578	62,834	134,795	249,406	1,175,613	63,067	3,382	7,221	7,320	80,990	3,469,386
A. H. Alden.....	1,309,592	269,925	306,871	79,849	1,966,337	350,290	56,919	67,566	105,519	570,294	16,000	5,440	—	—	21,440	2,558,071
Neale & Staats.....	442,669	105,409	114,695	63,659	726,432	207,566	33,647	49,258	111,913	402,284	32,960	2,240	3,960	—	39,160	1,167,876
Weeks & Astlett.....	403,661	70,838	99,848	179,882	754,229	11,455	344	2,490	106,179	120,468	—	—	—	—	—	874,697
J. H. Andresen, Succs.....	45,920	10,400	8,230	24,583	89,133	440,048	158,718	111,033	75,641	785,440	59,280	11,795	16,182	1,100	88,357	962,930
B. A. Antunes & Co.....	55,840	8,640	10,440	24,760	99,680	152,000	32,462	28,054	12,423	224,939	—	—	—	—	—	324,619
Kahn, Pollack & Co.....	—	—	—	—	—	33,253	5,533	5,595	3,028	47,409	116,912	16,996	32,327	3,681	169,916	217,325
Denis Crouan & Co.....	69,937	12,932	16,156	6,829	105,854	20,260	3,550	3,229	9,430	36,469	10,820	3,810	7,680	6,660	28,970	171,293
Brocklehurst & Co.....	13,553	2,607	2,430	—	18,590	60,229	9,365	13,084	53,097	135,775	—	—	—	—	—	154,365
Marius & Levy.....	—	—	—	10,400	10,400	15,486	3,337	4,198	37,870	60,891	15,580	4,221	3,455	50,988	74,164	145,455
J. Bockris.....	2,210	510	1,190	154	4,064	3,330	1,310	2,032	1,150	7,722	27,000	5,360	11,194	1,287	44,841	56,627
Fello & Co.....	21,590	3,060	6,120	—	30,770	39,440	8,160	8,460	—	56,060	—	—	—	—	—	86,830
Sundry Shippers.....	82,701	36,052	25,368	3,642	147,763	64,700	8,024	13,944	15,562	102,241	126,627	14,222	22,707	99,492	262,978	512,972
Iquitos, Transit.....	—	—	—	—	—	336,959	26,931	136,059	586,845	1,086,794	242,894	28,628	83,483	331,078	686,083	1,772,877
TOTAL, 1903.....	5,112,756	1,226,853	1,252,992	1,098,975	8,691,576	4,110,018	628,672	892,947	2,018,614	7,650,251	1,030,367	133,488	221,933	547,886	1,933,674	18,275,501
Total, 1902.....	3,764,079	1,045,578	1,011,049	1,073,623	6,893,339	3,607,134	741,369	789,593	1,297,112	6,435,208	303,486	191,740	299,530	519,792	1,814,548	15,143,095

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1903.....	4,374,505	325,175	4,049,330	November, 1903.....	4,406,864	2,658,880	1,747,984
January-October.....	46,494,340	2,958,223	43,536,117	January-October.....	44,926,000	32,337,424	12,588,576
Eleven months, 1903.....	50,868,845	3,283,398	47,585,447	Eleven months, 1903.....	49,332,864	34,996,304	14,336,560
Eleven months, 1902.....	46,007,428	3,060,589	42,946,839	Eleven months, 1902.....	42,921,648	29,848,448	13,073,200
Eleven months, 1901.....	50,096,293	3,478,559	46,617,734	Eleven months, 1901.....	47,629,792	29,943,536	17,686,256

GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1903.....	2,546,500	636,020	1,910,480	November, 1903.....	65,120	22,000	43,120
January-October.....	28,516,400	9,751,500	18,764,900	January-October.....	1,286,120	126,720	1,159,400
Eleven months, 1903.....	31,062,900	10,387,520	20,675,380	Eleven months, 1903.....	1,351,240	148,720	1,202,520
Eleven months, 1902.....	30,089,840	12,643,400	17,446,440	Eleven months, 1902.....	1,409,540	107,360	1,302,180
Eleven months, 1901.....	26,237,640	10,042,780	16,194,860	Eleven months, 1901.....	1,317,580	207,020	1,110,560

FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
November, 1903.....	2,172,280	1,061,940	1,110,340	November, 1903.....	—	—	—
January-October.....	13,195,820	7,619,040	5,576,780	January-October.....	2,400,420	22,660	2,377,760
Eleven months, 1903.....	15,368,100	8,680,980	6,687,120	Eleven months, 1903.....	—	—	—
Eleven months, 1902.....	14,144,460	9,111,300	5,033,160	Eleven months, 1902.....	2,396,900	12,540	2,384,360
Eleven months, 1901.....	14,525,060	9,071,360	5,453,700	Eleven months, 1901.....	2,371,380	25,080	2,346,300

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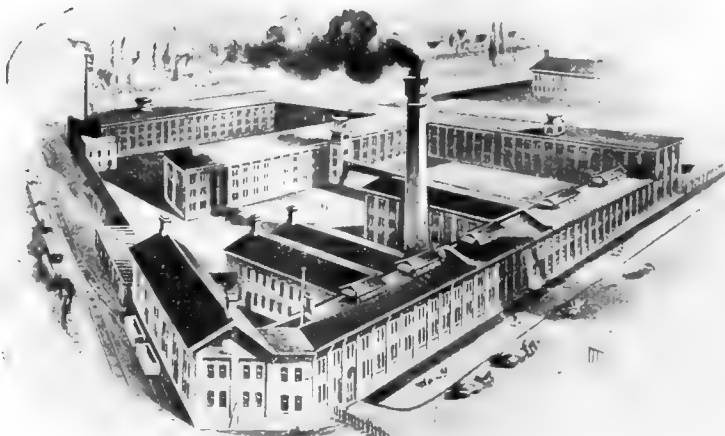
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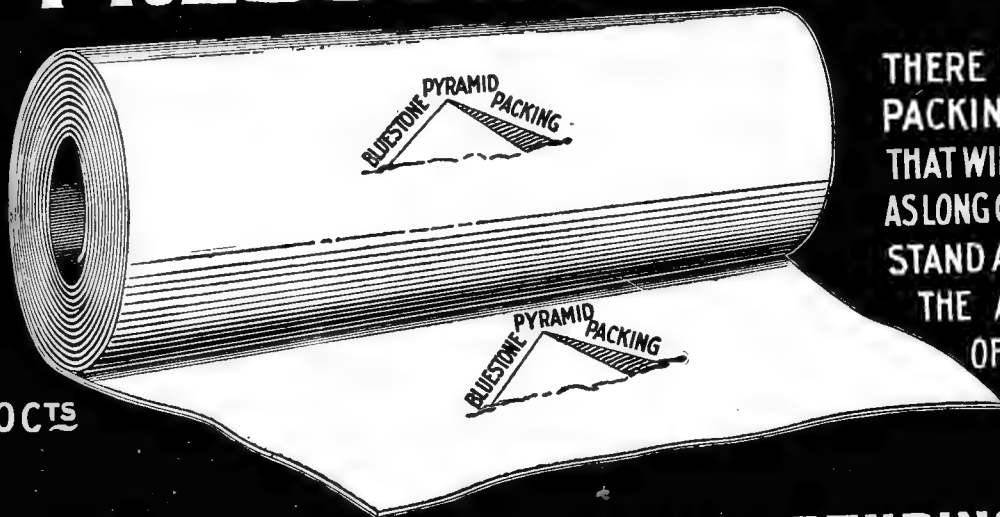
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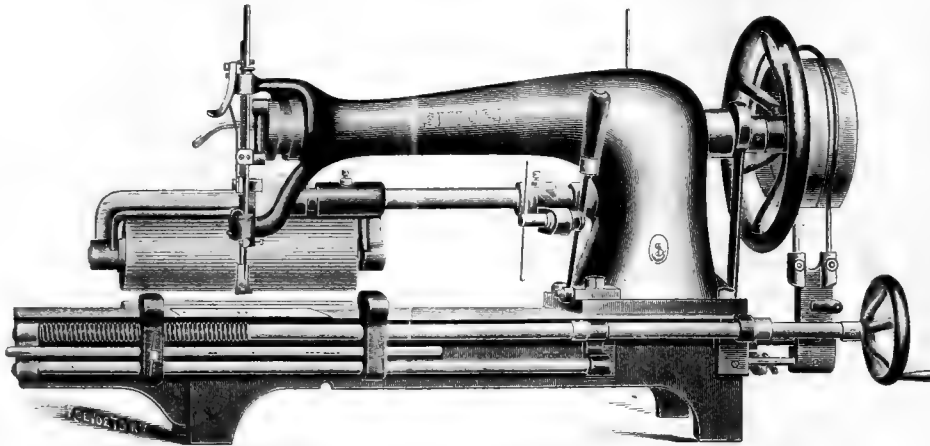
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"TAKE IT OR LEAVE IT."

IT often happens that a wise adage, an ancient saying, or a neat catch phrase so takes hold upon the memory that it is made to serve occasions for which it is inherently unfit. To all those who buy or sell, that which heads this article is quite familiar. It means, in plain English, quit bargaining—now or never—"put up or shut up." It is conspicuously discourteous, and is used only by the petty salesman who is infatuated with himself, or the wealthy commercial giant who intends to die fighting.

For use in our own free country it is to be discounted, as it makes enemies needlessly, but what of it in the Orient, where all trading is founded on courtesy? One would think that such a phrase would never fall from the lips of an American salesman in dealing, for example, with a wealthy Chinese merchant. And yet not long since it did occur. A capable, energetic Yankee had shown samples of goods to a merchant who, by the way, was alive to their quality and cheapness, but instead of closing the sale in a moment, the would be buyer invited the other to take a cup of tea. The salesman was impatient, refused the tea, and said, "Here's the proposition; take it or leave it." At once the merchant left it. Nor did the matter end there. At his trade guild that evening he told the story, and every member decided that they did not care to deal with such a barbarian, and not one order could he book in the great city that he was then visiting.

This salesman probably does not know to-day that his impatient attitude, together with that vicious catch phrase, shut him out for all time from a fine market, but his keenest competitor, not an American, knows and profits by it. Were the case an individual rather than a typical one, it would not be worth quoting; but it is not, and unless our salesmen recognize the fact that they must be adaptive as well as aggressive, they are bound to be left. Tactful hustle will go anywhere. "Take it or leave it" hustle is of no use at home and less abroad.

THE CONGO AND THE MADEIRA.

WE have given space to frequent references to the Congo railway—a line about 200 miles in length, around the cataracts in the lower Congo river—for two very definite reasons. The first is that, but for this railway the important rubber development in the Congo Free State would have been impossible, so that its construction has been a matter of concern to the whole rubber industry. The second reason is that the success of the Congo railway has always appeared to us to point to the most practical means for overcoming the similar natural barrier to an equally rich rubber region in South America.

The river Madeira, an important affluent of the Amazon, receives the waters of the Beni and other Bolivian streams which drain a wide rubber district, but owing to a long series of cataracts in the Madeira the cost of transportation by that route is almost prohibitive, and there is no alternative route that is more favorable. A railway of the same length as the Congo road would connect the naviga-

ble sections of the Madeira now separated by the series of falls.

It is an important fact that the Congo railway has proved a profitable enterprise. Before it had been half completed—while goods had still to be carried by porters over half the route—the transportation of merchandise began to yield returns in excess of running expenses, and during the six years of operation of the whole line there has been a fair dividend on the shares, after meeting the charges on the funded debt. It may be urged that the Congo railway is not altogether a commercial enterprise, on account of the use made of it by the state in developing its various undertakings. At the same time, the state has charged itself with transportation costs, so that the balance sheet of the railway company shows larger receipts than expenses. The company's report for the sixth year—to June 30, 1903—now before us, shows capital outstanding to the amount of 29,847,500 francs [= \$5,760,568] and about 50,000,000 francs in bonds. The operating expenses amounted to 35½ per cent. of the gross earnings. The net profits applicable to dividends, after meeting interest charges and reducing the bonded principal were 2,508,365 francs [= \$484,114.42]. On its face, at least, this is a good showing.

The Congo railway has a monopoly of traffic in its region, and will always have; so would a railway around the Madeira falls. An important part of its traffic is for the account of the state; the same would be true of the Madeira line if it should be taken advantage of by Bolivia as a means to the development of that country. It has been urged, in relation to the Congo road, that the rates charged over it, and made possible by peculiar conditions, were too high for a legitimate commercial undertaking. By analysing its income account for 1902-03, we arrive at the following average charges for freight per metric ton:

On the ascending trains.....	\$88.93
On the descending trains.....	78.17

Regarding the steamboat charges above the railway, we have no data. Ocean freights from the lower terminus of the railway probably are not excessive, compared with charges from other African ports. Now let us look at the cost of transportation between Pará and the Beni river country, by the Madeira route, over the cataracts, as supplied to THE INDIA RUBBER WORLD by a commercial house a year or so ago, per metric ton:

From Pará to the Beni.....	\$791.30 to \$1158.00
From the Beni to Pará.....	289 50 to 328.10

The time required for the ascending trip was mentioned as about 230 days; for the descent, about 70 days. Merchandise can be transported from Europe to points well in the Congo interior within a month, and the return trip made in equal time.

The fact that some commerce exists over the Madeira route, in spite of the existing obstacles, points to a development of trade only awaiting better facilities. If that commerce can bear the present high charges, there is reason to assume that considerable expansion would follow a reduction of rates. The need is real—if we consider only the

rubber business—for the now promised Madeira railway, and it is to be hoped, from the recent indications of a more practical statesmanship developing in the two nations most nearly interested, that the project will not end in talk.

A RECIPROCITY TREATY between the United States and Brazil has gone into effect, which is mentioned here because among the products of this country to which Brazil gives a preferential rate of 20 per cent. below the regular tariff on imports are manufactures of India-rubber. While every opening for increased trade relations between the two republics should be welcomed, THE INDIA RUBBER WORLD sees in the present case no reason for departing from its position that diplomatic agreements alone do not sell goods. We of the United States buy Brazilian rubber and coffee because they are necessities, and Brazil is the best source of supply, but this fact imposes upon the latter country no obligation to buy manufactured wares from New York if some other market appears preferable. The demand for rubber goods in Brazil is not yet large, but if it were, the fact that we produce rubber goods of a quality and at prices not excelled elsewhere would not give us an even chance with competitors working more actively to market their products. Last year the United States sold to Brazil only \$22,037 worth of rubber goods. During five years past the annual average has been only \$16,426. Great Britain probably sells in that market six times as much, and Germany even more, both countries showing an annual gain, and it is hardly probable that a tariff concession of 20 per cent. will change the relative position of American rubber goods, other conditions remaining the same.

THERE IS NOT SPACE ENOUGH in THE INDIA RUBBER WORLD for half the news that comes from Colorado regarding the preparations for extracting rubber from certain wild plants in that state, and as any abridgement of the news might fail to do justice to the subject, we must postpone any comprehensive treatment of it until arrangements can be made for the enlargement of our paper. We may take the liberty to note, however, that this enterprise is being prosecuted with entire disregard of the rubber manufacturers, whose opinion of the product does not seem to be of interest to the Colorado promoters, which suggests the thought that, having a new material, they may be planning to utilize it in establishing an entirely new industry. Perhaps at last has been found the business which is to knock out the "rubber trust." From the esteemed Denver Post of February 16 we learn that there are two original rubber concerns in Colorado, each with the best method for preparing the new rubber, and that these are in "open warfare," which certainly is better than trying to strangle each other in the dark. One company, it seems, has been incorporated with \$1,000,000 capital, while the other, not incorporated, has not revealed its measure of financial strength. We can only hope that the best rubber may win.

THE PROGRESS IN RUBBER PLANTING in the Far East has become so important in its extent, in results already attained, and in prospective returns, as to merit much fuller treatment than it has yet received. For this reason the Editor of THE INDIA RUBBER WORLD has made a personal tour of the planting districts, with a view to making an exhaustive report on the same, in the hope that it will prove of interest and value to rubber planters generally. The report will begin to appear in our next issue.

RUBBER PLANTING INTERESTS.

BATAVIA COMPANY.

[Plantation "Batavia," near Santo Domingo, in the district of Culcatlan, state of Oaxaca, Mexico. Office: Wells building, Milwaukee, Wisconsin. See THE INDIA RUBBER WORLD, August 1, 1903—page 373.]

THE president of the company Ceylon E. Lyman, on January 26, started for Jamaica to visit a rubber plantation there, meaning to return by the company's estate. On February 15 the inspector chosen by the shareholders—Ben L. Edgerton, of Oshkosh, Wisconsin—was to start on his inspection tour. C. M. Kendall, general agent, informs THE INDIA RUBBER WORLD that they now have 20,000 rubber trees growing, from three to four years old, with 70,000 seedlings ready for transplanting, and that they expect eventually to have 4000 acres in rubber. The company is now one year old, having acquired an estate on which planting had begun. The company's *Bulletin* No. 4 states that they expect the 20,000 trees mentioned to be productive by 1907. Recently seeds of twenty-five different tropical plants have been obtained from Ceylon with a view to testing their economic value in Mexico.

THE SAN MIGUEL PLANTATION CO.

[Hacienda "San Miguel," state of Vera Cruz, Mexico. Office: Chamber of Commerce building, Chicago. See THE INDIA RUBBER WORLD, April 1, 1903—page 226.]

THE plantation of this company has been visited during the month by Richard Walsh, president, and H. E. Rose, secretary and treasurer and general manager of the company, and others from Chicago and Toledo, Ohio, who are interested in it. The party includes Dr. L. J. Liffing, of Toledo, who is making the annual inspection in behalf of the shareholders. Mr. Rose informed the *Mexican Herald* that 520 acres had been planted in rubber and 500 acres in sugar cane. There had been sold to a neighboring sugar mill, for their first year, 20,000 tons of cane for \$40,000, gold. It is intended to increase the acreage of rubber and sugar each to 1000 acres.

COSTA RICA RUBBER CO.

[Plantation, San Carlos, Costa Rica. Office: No. 203 Currier building, Los Angeles, California.]

THIS company has been reorganized since its first mention, as the Costa Rica Development Co., in THE INDIA RUBBER WORLD of May 1, 1902 (page 254), the principal officers remaining the same. There are now owned 2500 acres of land between the San Carlos and Tres Amigos rivers, in Costa Rica, and 60 miles from Greytown, Nicaragua. The company now have 25,000 two year old rubber trees and 15,000 one year old trees growing, with 100,000 trees in the nursery, besides 5000 two year old cacao trees, and 15 acres in tropical fruits. An official of the company writes to THE INDIA RUBBER WORLD that the company was formed by business men of Los Angeles on the solid plan of "put your hand in your own pocket, and pull out the dollars to work with," which has been followed to the present time, with such satisfactory results that, in view of the ultimate success which they feel is assured, they are now offering some of their treasury stock to the public, to obtain funds for further development, the idea being to continue planting until the whole estate has been covered. Already plans are under way for forming a nursery of 300,000 rubber plants this year in addition to the transplanting which has been arranged for.—At the second annual meeting of shareholders, at the office in Los Angeles, on February 8, the following directors were reelected: L. W. Blinn, H. Jevne, Octavius Morgan, A. C. Harper, B. A. Benjamin, E. B. Merrill

R. H. Wilkinson, and C. S. Hogan, and F. B. Hudson was elected in place of W. B. Raymond. The secretary, C. S. Hogan, made a favorable report on the condition of the company, and the treasurer, E. B. Merrill, reported enough funds on hand to assure the carrying out of this season's plans, with only one-fifth of the capital stock of \$500,000 sold.

ORIZABA RUBBER PLANTATION CO.

[Plantation "Chival," Salto de Agua, state of Chiapas, Mexico. Office: No. 215 Dearborn street, Chicago, Illinois. See THE INDIA RUBBER WORLD, August 1, 1902—page 253.]

A FINANCIAL statement of this company, for the year ended November 30, 1903, appears in their bulletin, *Chiapas News*, for February, amounts being expressed in Mexican silver. Receipts were \$88,000.48 and expenditures \$83,837.10. Labor, subsistence of laborers, and salaries cost \$54,038.26. For merchandise for the company store \$13,670.92, was expended, and store sales reached \$11,151.72. Store profits to September 30, amounting to \$2001.89, were applied to dividend account, together with \$3000 derived from the sale of corn. Certificate holders were paid a 5 per cent. dividend on December 15, amounting to \$4207.22.—The annual inspector chosen by the stockholders is Howard Little, of Newton, New Jersey, who should now be on the plantation. President James B. Sanford, of Chicago, is also in Mexico.

CHIAPAS RUBBER PLANTATION CO.

[Plantation "San Luis," near Palenque, department of Palenque, state of Chiapas, Mexico. Offices: Crocker building, San Francisco.]

THIS company has been referred to frequently in THE INDIA RUBBER WORLD as the Chiapas Rubber Plantation and Investment Co., under which name it was incorporated in California, July 7, 1899. On December 12 last, circular letters were sent to all the investors in the company, in relation to reorganizing under the shorter name printed above. The responses were so favorable that it has been decided to carry out the new plans, pursuant to which a new corporation has been formed, under the laws of Arizona, with 25,000 shares of capital of the par value of \$200. The old company has sold its plantation to the new for 17,500 shares of the capital of the latter, leaving 7500 shares of the new company in the treasury. The old company will remain in existence until it shall have purchased all of its outstanding harvest certificates of the stock of the new company. The reason for the change is explained as follows: Under the original plan the holders of harvest certificates would be entitled, by the time the rubber plantation became productive, each to take his interest in the form of a proportionate amount in acreage of the lands. Realizing that such division of the property might not lead to the best and most economical management in the end, the plan was proposed of conveying the property to a corporation in which all the certificate holders should be stockholders, with a permanent title in an undivided business, under the control of experienced men in permanent positions, and uniform dividends to all the investors. But if every stockholder should take a parcel of the land and have it cultivated through his own agent or employes the total cost would be greater, and the possible profits largely diminished. Another point made was that much of the land in the large holdings of the company is not suited for rubber, while the old plan of organization did not permit the company to plant anything but rubber. The land is well adapted for cattle raising, for which interest a good market exists, and on the advice of the resident manager it is proposed

to devote a considerable acreage to grazing. The circular to the investors stated that about 5000 acres had been planted with rubber trees, forming the largest rubber plantation in Mexico and probably in the world.

THE PLAYA VICENTE PLANTATION CO.

[Plantation near Playa Vicente, state of Vera Cruz, Mexico. Office: No. 245 Main street, Dallas, Texas.]

INCORPORATED under Colorado laws; paid up capital, \$100,000. Location on the isthmus of Tehuantepec, on the Tesechoacan river, 18 miles from Perez, on the Vera Cruz and Pacific railway. Own 7200 acres, with some development work begun when the tract was acquired. Some rubber has been planted, 600 trees to the acre, and additional planting is to be done yearly. The proposition to investors is to sell acreage, not stock, at \$300 per acre, in installments, if desired. Officers: M. B. Johnson (Dallas, Texas), president; W. L. Stowers (Denver, Colorado) and E. S. Emmert (Dallas), vice presidents; E. W. Smith (Denver), secretary; The Fidelity Savings Association (Denver), treasurer and trustee. Dr. W. S. Cockerill, of the City of Mexico, is the resident Mexican representative of the trustee. Eugene Griffin is plantation manager.

AGRICULTURAL EXPERIMENT STATION IN MEXICO.

THE concession for the first agricultural experiment station in Mexico has been made to The Consolidated Ubero Plantations Co., through Señor Thomas Moran, a member of the Mexican house of deputies, and a director of the company named. Under the terms of the concession the company are to erect buildings, on plans to be approved by the government, to cost \$7000, after which the government will appropriate \$10,000 for the aid of the station, to be conducted on similar lines with agricultural experiment stations in the United States. The company will control the station for five years, when it will become the property of the government. The station is to be devoted to the testing of tropical plants and seeds from different countries, to determine what are best adapted to Mexico, with the idea of promoting general agriculture in that country. The new station will be located on the company's lands at Ubero, on the isthmus of Tehuantepec; their offices are at No. 89 State street, Boston.

GOING TO MEXICO TO STUDY RUBBER.

A PARTY of twenty-five persons from various parts of the country now at the Waldorf-Astoria have been sightseeing here since Tuesday. They are on their way to Mexico to study rubber culture on the Isthmus of Tehuantepec, and start at 11 A. M. to-day by the Ward Line steamer *Havana*. The party includes O. W. Kennedy, late general superintendent of the H. C. Frick Coke Co., Uniontown, Penn.; S. M. Graham, vice president of the Fayette Title and Trust Co., Uniontown, Penn.; J. E. Keith, of the Keith Manufacturing Co., Canton, Ohio; R. J. Linton, capitalist, Belle Vernon, Penn.; the Rev. W. D. Atkinson, Norwalk, Ohio; Dr. E. L. Norton, Madison, Ohio, and John A. Schauweker, of the jewelry firm of Schauweker Brothers, of Cleveland Ohio.—*New York Tribune*, February 18.

KAMERUN (GERMAN WEST AFRICA.)

[See THE INDIA RUBBER WORLD, December 1, 1901—page 71.]

THE Moliwe Pflanzungs-Gesellschaft, of Hamburg, Germany, at the end of their fourth year (July 1, 1902—June 30, 1903), reported that 76½ acres of their estate at Moliwe, in this colony, had been planted with rubber, 63 acres being devoted to *Kickxia elastica*, the tree which yields the Lagos rubber. About 10 acres are planted to *Castilloa elastica*, and the remainder to various other species. During the year over 100 acres were prepared for the planting of 60,000 *Kickxia* trees, in addition to the 28,500 now standing. No further planting of this species

will then be done until the profits of *Kickxia* culture have been established. The rate of growth of the older trees of this species has been most satisfactory, while the later planting has suffered from the ravages of caterpillars. The *Castilloa*, as mentioned in former reports, does not seem so well suited for this district, many of the plants having been destroyed by beetles. *Hevea Brasiliensis* appears to thrive well, and the company intend experimenting with it for shading cacao, for which purpose about 3000 seeds have been planted recently at distances of 18×18 meters and also 13½×13½ meters. The company was organized in 1899, with a capital of 1,100,000 marks [= \$261,800]. The principal interest of the company is in growing cacao, of which more than 1000 acres have been planted.

YIELD OF WILD "CASTILLOA ELASTICA."

THE Pan-American Planters' Co. (Chicago) in a recent bulletin present a photograph of the tapping of a wild rubber tree on their estate which measured 75 feet in height and which apparently had been tapped many times before and very carelessly. Owing to this fact and the resulting roughness of the bark, the latex flowed irregularly and much of it was lost. Twelve pounds were saved, however, which should have yielded five pounds of dry rubber. The latex was preserved, however, in bottles to be distributed as samples.

THE PANAGULA RUBBER CO., LIMITED.

THIS company (registered at Colombo October 30), has been organized to acquire from the government of Ceylon a tract of land in the Kelani district, for the forming of a rubber plantation. The nominal capital is 500,000 rupees [= \$162,216.66], in 5000 shares, of which the initial issue is 1250 shares. The registered office is at Hatton.

TO REPORT ON RUBBER IN LIBERIA.

MR. ALEXANDER WHYTE, late curator of the botanic station in Uganda (East Africa), has retired from the government service on a pension, after having spent forty years in botanic work, mostly in the tropics. Evidently he does not intend to stop work, however, since he has undertaken to visit Liberia and make a report on the native rubber and the prospects for cultivation, for the Liberian Rubber Syndicate, Limited.

GUTTA-PERCHA PLANTING IN BORNEO.

THE Netherlands Gutta-Percha Co., Limited, a Singapore venture, has now a steamboat plying in the neighborhood of Banjarmasin in its business interests as regards the gathering of Gutta-percha leaves. The company pays a small premium for every newly set out gutta plant. It has about 50,000 guilders [= \$20,000] available for this purpose in southeast Borneo during the next five years, and reckons then on having 10,000,000 gutta plants ready for plucking at easily accessible places. The plants set out now are expected to be productive in five years' time.—*The Straits Times*.

RUBBER PLANTING COMPANY PUBLICATIONS.

THE Tehuantepec Rubber Culture Co., New York.—Report on plantation progress to October, 1903 [4 pages], with financial statement separate.

Joliet Tropical Plantation Co., Joliet, Illinois.—Joliet Tropical Plantation Bulletin. Vol. II, No. 1—August, 1903. 4 pages.

Batavia Co., Milwaukee, Wisconsin.—Mexico, The Land of Sunshine and Fortune. [Referring to the company's rubber planting proposition.]

Batavia Co., Milwaukee, Wisconsin.—Easy Road to Independence [being details of financial plans of their rubber plantation in Mexico]. 21 pages.

Rio Michol Plantation Co., San Francisco.—Reports of C. A. Westenberg, president, and Dr. Allen H. Suggett, a stockholder [on a visit to the plantation, in September, 1903]. 6 pages.

THE ART OF VULCANIZATION.*

It is only recently that it has become understood that in vulcanization there is a chemical union of rubber and sulphur. In fact, it is so recently, *that manufacturers generally cannot be said to have had their attention called to it, until within the past few months.* The first authoritative announcement of the fact in a manner to command the attention of manufacturers in the United States was the publication in England early in 1903 of Dr. Weber's most excellent work on the "The Chemistry of India-Rubber." But the circulation of such a work in this country is necessarily slow, notwithstanding that it is a work of such a character that it should not only be read, but carefully studied by every manufacturer.

Very shortly after the publication of Dr. Weber's work there was published, also in London, a translation of another excellent work, published in France, by T. Seeligmann, a French chemist, and others, entitled "Indiarubber and Gutta Percha." Even at the date of this publication, Seeligmann did not agree with Dr. Weber to the proposition that in vulcanization there is a chemical union of rubber and sulphur, but thought that perhaps the mixture of rubber and sulphur was in the nature of an alloy. Quoting in his work the opinions of Payen, Heinzerling, Unger, and Donath on the subject, Seeligmann summarizes their views as follows:

These authors therefore consider vulcanized rubber as a sort of alloy of the organic substance of the rubber with the sulphur or with a sulphide or even with the chloride, bromide or iodide of sulphur. *This condition is not combination* properly so called, from which the formation of a well defined chemical individuality would result. It differs, however, from a simple solution or mechanical mixture.

Seeligmann's own opinion is given as follows:

From this point (248° F.) the sulphur modifies its condition; it melts, at the same time that the pores of the rubber are sufficiently dilated to allow of the gradual absorption of the liquid vulcanizer—sulphur. But at the same time as the chemical action commences, the liquid sulphur combines with the adhesive hydro carbide, and forms with it a new chemical body or rather an alloy. This action naturally continues if the process be prolonged at the same temperature, so that it penetrates further and further into the mass.

Aside from Dr. Weber's work we do not remember any public announcement in this country of the result of recent analyses which showed conclusively the chemical nature of the reaction until THE INDIA RUBBER WORLD referred to it in a recent issue.

Thus the knowledge of the true nature of the chemical reaction in the vulcanizing process cannot be said to have become known to manufacturers generally until a very recent period. Prior to that they had been engaged for upwards of half a century in developing and extending the manufacture of vulcanized rubber goods in ignorance of the true nature of the process. They developed the business from an insignificant amount in 1844 until it has become one of the leading industries of our land. The application of vulcanized rubber has been continually extended until it can be safely said that to-day there is not an art or a science that is not more or less dependent upon its use. But it is only the physical characteristics of vulcanized rubber that at present concerns the manufacturers or the public as it has during the past fifty years. While this is so, the chemical nature of the problem should in nowise be overlooked. Now that the true nature of the reaction is understood we may

confidently look forward to discoveries in the near future that will be of inestimable benefit to the manufacturer.

It is popularly believed that the art of vulcanization consists in submitting crude rubber to the action of heat in connection with sulphur, whereby the characteristics of the rubber are so changed as to produce an article which is strong, durable, and which possesses all the qualities usually associated with vulcanized rubber. This however is an error, as crude rubber is seldom, if ever, submitted to the vulcanizing process. No use can be conceived for crude rubber that might be vulcanized by any process. It is only rubber that has been through the various processes of washing, drying, masticating, compounding, and calendering that is ever submitted to vulcanization. In each of these operations its properties are changed in some respect. By the time that rubber compounds are ready for shaping into the various articles for which they are intended, the crude rubber has lost nearly all of its distinguishing physical characteristics. It is the province of the curing, the final step of the vulcanizing process, to restore to these compounds the original qualities of crude rubber, and to add the properties of resisting the action of heat, cold and its ordinary solvents. Aside from these latter no new physical qualities whatever are the result of vulcanization.

The art of vulcanization includes every step in the process from the crude rubber to the finished product. In each of these steps, the extent of the change which takes place in the properties of the rubber depends entirely on the judgment of the operator. In each step before the final one, the workman handles the stock and is thus enabled to judge when his part of the operation has been properly performed. The final result, however, is materially affected by any error in judgment on the part of any operator. In order to ensure a successful result of the vulcanizing operation each step of the process must be performed with a due regard for the operations which have preceded or which may follow.

The submission of rubber to the action of heat at a vulcanizing temperature does not of itself result in vulcanized rubber. Something more is necessary. This part of the process, like each other part, must be conducted with reference to the preceding operations, for the result is absolutely controlled by the manner in which those operations have been performed. To this end, the workman proceeds in accordance with a formula given him which is adapted to the particular class of goods to be vulcanized. No matter how skilful the workman may be, he cannot in applying the formula control the result. As the operation progresses he does not handle the goods, he does not see them, and, in all operations under pressure, he cannot see them until the operation is completed. There is thus no opportunity or need of exercising any discretion. But even here a large experience is necessary. For often it is not possible to follow the formula exactly. Sometimes the temperature rises too fast, sometimes too slowly. He must then be able to judge how much more time or how much less, will fulfil the requirements of the formula. But this is not a discretion that controls the result.

The art of vulcanization cannot be learned from books—only from experience. This, however, does not imply that information obtained from books is of no value. On the contrary, the information given in books by investigators of ability and thorough acquaintance with the art, must be exceedingly valu-

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able. But such information, without the ability to apply it, which can only be acquired through long experience, can be of little or no value to its possessor.

It is evident therefore that opinions concerning the process as to how it is or should be conducted are absolutely of no value unless they are expressed by persons having perfect familiarity with every part of the art. Because one manufacturer conducts his operations in a certain manner, it cannot be said that another manufacturer who proceeds differently does not understand the art as well as the other.

When vulcanization was first discovered only Pará rubber was known, and vulcanized rubber had a very limited application, being largely confined to articles for personal use. Since that time a large number of varieties of rubber have been discovered, none of which however are equal in value to Pará rubber, and all of which must be treated differently. If the manufacturers of to-day had only Pará rubber to deal with, and if the public were willing to pay a fair price for goods of a high quality made from it, the art would be comparatively easy to practice. But the ever increasing demand of the public for cheaper goods, having, however, the same appearance as those of a high grade, compels the manufacturer to be continually devising expedients to meet it. The most natural course to meet this demand is to employ cheaper rubbers, and to adulterate the compounds with substitutes and the various filling ingredients. To make such changes is generally difficult for the manufacturer.

To the ordinary observer it would seem perfectly simple to employ cheaper grades in place of the high grades. He can see no more difficulty in doing this than there would be in substituting in a leather shoe a cheaper grade of leather in place of a high grade—a substitution which is very simple and which only results in another grade of goods.

It must be considered, however, that the cheaper grades which constitute about half of the world's production of rubber cannot be worked, compounded, or cured in the same manner as when Pará rubber is used. For instance—if a compound consisting of 12 pounds dry fine Pará rubber, 6 pounds litharge, 6 pounds whiting, and 6 ounces of sulphur, a very common compound, be submitted to the ordinary dry heat temperature, it vulcanizes readily in 32 minutes, or in 12 minutes if the vulcanizing atmosphere be impregnated with sulphur, the temperature being the actual temperature of the rubber itself. If, however, upper Congo red balls, one of the best grades of African rubber, be substituted for the Pará in this compound, there is not the slightest trace of vulcanization in 32 minutes if heated in air—nor in 12 minutes if the atmosphere be impregnated with sulphur. Neither is there any trace of vulcanization after an exposure of an hour or even two hours, though the percentage of sulphur be increased to 5 per cent. When the vulcanization does take place after a longer exposure the result is unsatisfactory. If the vulcanizing medium be metallic without pressure, which will effectually exclude the air during the submission of the compound to heat, the same compound requires an hour for vulcanization instead of the 32 minutes, thus showing that the difficulty is inherent in the rubber itself and not the result of any injurious action of the air. But this process cannot be substituted for the usual dry heat process. To successfully employ one of the cheaper grades of rubber in the dry heat process in place of Pará or to employ one of the numerous substitutes that are on the market, or to use a much larger quantity of whiting or other adulterant, requires a whole series of experiments on the part of the manufacturer before he can learn how to make the necessary changes in his process, and after that, many more of less unsuccessful trials on the part of the workmen.

It does not follow at all that because certain of the cheaper grades of rubber can be successfully vulcanized by one process that they can be successfully vulcanized by another process. Certain grades of rubber that are vulcanized by the steam process have hitherto resisted all attempts to vulcanize them by the regular dry heat process. Neither does it follow that if the manufacturer is successful in thus cheapening his compound that the goods made from it will prove durable. It is therefore necessary before putting them on the market to lay samples aside for many months in order to ascertain whether the compounds are durable or not. If they stand this test the manufacturer should even then lay aside further samples of the goods to guard against possible elements of decay which often do not show themselves until after a year or two.

A well known illustration of the necessity of following this practice has been seen in the experience of one of the largest, best equipped, and best managed factories in the United States, and one that has at its head the best expert talent that can be found in the world. Some time since, not more than two or three years or so, it was found that the goods of this company which had been distributed among the trade were proving defective after being used. As time passed, more and more reports of defective goods were received. These increased to such an extent that a thorough investigation was made, when it was found that quite a portion of the goods made in this factory during several months were proving to be defective. But this was not the end of the trouble. The defective goods had become so mingled with sound goods that it was found practically impossible to separate the sound from the unsound. It was therefore necessary to recall a very large amount of goods that were in the dealers' hands, and to sell these with all others on which any suspicion could be cast, for what they would bring as unsound goods.

And yet these goods had been daily examined thoroughly by the best expert talent to be found and passed as sound goods. As none of the defects developed for several months, and as a year or more elapsed before the extent of the damage was ascertained, it can be readily seen that the loss on these goods must have been very heavy, whereas if the defects could have been discovered at the time the goods were made or within a short time afterwards, the defects could have been remedied, and the loss thus reduced to a moderate amount.

It is thus seen that the art of vulcanization is by no means a simple one; that it cannot be learned from books or formulas and that long experience is necessary for its successful practice; that it is applied only to rubber which has been properly compounded and worked, and that the result of applying the usual formulas in the final vulcanizing process depends entirely on the manner in which such compounding and working has been performed; that it is difficult for the manufacturer to use cheap grades of rubber or substitutes in place of Pará rubber, and, that when such substitution has been apparently successful, the greatest care must be taken to prove the durability of the goods made from the changed compounds.

One of the greatest fields in the art for investigation at the present, if not the greatest, is to discover means whereby the cheaper grades, which have the same chemical composition as the Pará rubbers, may be vulcanized by the dry heat process so as to equal the latter in strength and durability.

A TARIFF DECISION.—An importer of rubber recoil pads at Portland, Oregon, claimed them to be dutiable as manufactures of India-rubber, but the collector imposed the rate of duty on "parts of guns," which was confirmed by the general appraisers when an appeal was made.

PROBLEMS OF RUBBER MILL MANAGEMENT.

By an Assistant Superintendent.

THE really modern rubber factory should have for superintendent a man who has years of practical experience back of him, and who has learned, among other things, that the business of rubber manufacturing is progressive, and that to hold his own as a superintendent he must not only progress with it but push. Such a man will strive to provide machinery that will enable him to produce a pound of finished product at a cost that will allow of its finding a quick purchaser at a fair percentage of profit.

What, then, is the dominant proposition that constantly confronts the factory superintendent? Evidently this: What is the lowest price per pound at which rubber goods acceptable to the trade can be made? Into this proposition enter the entire gamut of processes from washing the crude rubber to packing the finished product.

How many men engaged in this industry absolutely know this? How many on the other hand assume a cost or guess at it?

The manufacturer who guesses at the cost of his goods, not only reflects upon his own acuteness, but deliberately paves the way to disaster. For there is no process, however complicated, but should be laid bare, and the more complicated the process, the greater the necessity for knowing, for the complicated process is the expensive one.

The superintendent should be a good reader of human nature. He should know his men, and he should know also that firmness, good judgment, and kindness will produce more goods at a minimum cost, than the harsh and frequently tyrannical methods adopted too often. He should also be a good planner, laying out and carrying forward the various processes, guarding constantly against "lost motion." This requires method; method requires thought and executive ability. But all of these conditions can be conceived, and sent a long way on the road to realization, through what a very successful manufacturer of rubber goods called the "scientific use of the imagination."

WAGES AND DISCIPLINE.—The average workman needs some sort of stimulant above and beyond the mere question of wages, to incite him to do his best. Without such a stimulus he becomes "rutty," and will make his job as easy as possible. The superintendent, on his part, however, should know just what constitutes a day's work on a mill, or a press, or a table, in any process, and knowing this is in a position to remedy abuses on their inception.

Factory discipline should be exacting. An employé is a cog in the complete machine; he must be in perfect adjustment. His usefulness must be so well established that there is no doubt that it "pays" to keep him. It is not a matter of sentiment, but the fact of pounds that he can produce. His capacity should be known, and wherever practicable he should be paid in accordance with it, and he should be encouraged always to do his utmost.

The fact established that the superintendent "knows his business" and "will stand no nonsense" acts as a stimulant to the average workman. Without it, it is remarkable how soon he lapses into a state of acute carelessness or shiftless indifference. With it, he becomes a producer. Foremen should be encouraged to a friendly rivalry with each other in bringing their departments to the high-water mark of efficiency.

Heads of departments are necessarily chosen for the special knowledge they possess, but they should be encouraged to take a broad view and wide interest in the general work of the factory, and appreciate that coöperation is one of the keynotes in any manufacturing proposition. As they are looked up to and copied by the workmen under them, they should understand the necessity of being on hand promptly for each session of work, and that intelligent, painstaking effort, in execution of all matters entrusted to them, is essential to their own success.

WASTE AND INSPECTION.—The daily product of "waste," consisting of trimmings from all sorts of goods, cured and uncured, is always an important item, but its limits are so well defined that it can be readily controlled. Waste, however, from goods spoiled in manufacture through improper construction or carelessness, is a much more serious matter, causing frequently great loss in time, and material, and, when such goods reach a customer, in prestige. There are at least two safeguards against this: First, a department devoted to experiment and test, in which a new stock can be put through its paces and its qualities thoroughly known. Second, the most rigid inspection as the work goes forward, and by the different foremen through whose hands the materials or product must pass, and finally by an expert inspector upon whose acumen dependence can be placed to pass on the finished article. As an adjunct to such a system, the plan of daily deliveries of all trimmings and spoiled goods to a designated location, will act as a constant check on a careless workmanship, and serve the especially desirable end of keeping departments clean and in order. Intelligent care is a paying investment.

BASIS FOR FACTORY ORDERS.—A factory that manufactures to fill customers' orders only, and nothing for stock, not infrequently finds on its hands an accumulation amounting to thousands of pounds of mixed stocks and other material, the excess on orders previously executed. This situation is never entirely satisfactory to the superintendent, and on the other hand it ties up too much money in the wrong way. This surplusage can be guarded against by ascertaining in advance the exact quantities required for each order, adding sufficient to cover waste, and then confining the compounding to actual requirements. Moreover, quantities required should be worked out by a clerk employed for the purpose, and not by foremen. This method has several advantages. It limits the compounding of a special or rarely used stock to actual requirements; it acts as a check on extravagance in making samples; it impresses workmen with the necessity for special care; and when misfortune or carelessness has depleted a stock before an order is completed, it brings the matter directly to the notice of the superintendent.

Not alone does this method of figuring up requirements help the factory, but it serves the very desirable end of posting the purchasing department as to the quantities of all commodities required to fill orders. To illustrate: One thousand feet of $\frac{3}{4}$ inch hose is ordered by a customer or for general stock. It calls for, let us assume, 94 pounds of mixed stock for the tube, 68 pounds of mixed stock for the cover, 68 pounds of friction for the friction, and 39 pounds duck. This information has been gathered from estimates, and verified in actual weights; therefore a safe working basis is assured. Dissecting all orders in this manner, whether they aggregate 100 pounds or 100,000

feet, the quantities of material that will be required can always be known in advance, and upon such information buying orders should be based, and the "guessing" method eliminated.

Doubtless most large factories have such a system, but many small factories have none, and hence are more or less at sea throughout each season as to just how much material they require, with the result of constantly running short, and thus delaying the execution of orders, or finding on their hands a surplus possibly unsuited to orders then in hand, and in which a considerable value in money is tied up. Certainly this represents a weak spot in any factory system, if the lack of some such method as above outlined can with propriety be called system.

Every factory large or small, therefore, for its safeguard, should possess knowledge on at least two important points: First, the quantities required with which to execute orders; second, the cost per pound to execute them. Some factories have what are called "theoretical estimates." That is to say, estimates based on past experience. Good as far as they go, perhaps, and may be relied upon in a carefully managed factory. But even then they should be checked against, or verified frequently. The variation in condition and character of ingredients, the changes in *personnel* of the working force, brought about by additions or dismissals, thus affecting the skill attained in any department of work; accidents or incidents more or less avoidable, such as breakage of molds, machinery, or appliances, each and all affect the cost of a particular article, or the entire daily product, so that review of and revision of cost should be as carefully attended to as the monthly balance sheet from the ledger. The prices of crude material are constantly changing; no two invoices of gum show the same percentage of shrinkage, hence the compounds should be looked after sharply and their cost revised, especially on a rising market. Every factory takes pains to have, in some convenient form, samples of all their mixed stocks, but the specific gravity of each is equally essential, as it makes a lot of difference in the quantity used to execute an order, whether a 25 cent stock has a specific gravity of .85, or 1.05. Yet I knew a prominent manufacturer, a few years ago, who actually did not know how to work out this simple but important problem. If there is a manufacturer who has maintained the "guessing system" and who proposes to verify his supposed costs, the chances are that a series of disagreeable surprises await him. Money is well spent that secures for a manufacturer the cold facts regarding his business.

THE MASTER MECHANIC.—The duties of this position are exacting and carry with it responsibilities second only to those of the superintendent. He should be preëminently a man who "knows that he knows." The superintendent may, on occasion, have "guessing" or experimenting to do, but the master mechanic, scientifically trained as he should be, should have the ability to so "set up" every piece of machinery that there can be no question as to its future successful operation. He must be equal to emergencies, with a cool head and quick judgment, and know that his arrangement of piping, shafting, belts, and pulleys is in strict accord with scientific adjustment and economical practice. On him lies responsibility for changes and repairs, and repairs and changes are constantly on the *tapis* in the modern rubber factory. He should appreciate that each piece of machinery is a unit, capable of producing well defined quantities of material or goods, and his care should be to see that, so far as his duties are concerned, it is up to the superintendent whether the goods are produced or not. A very good plan is to open an account with each piece of machinery, giving it a "No.," charging it with original cost, and

cost of installation, and making further charges for repairs and changes as they occur.

All such changes or repairs should be executed on registered orders issuing from the general office; otherwise "repairs" account becomes in time a blind item, that is dissected only after much backward labor. Such a method of registering orders for all repairs serves also the purpose of directing special attention to carelessness and neglect on part of employes, which, under the usual loose methods in common practice, would be kept *sub rosa* by the men most interested.

THE COMPOUNDER.—This position is one of especial trust, although the pay of such men would not as a rule suggest it. In his hands are placed the formulas to which a factory rightly attaches a particular value. He should be by nature and practice a careful man with whom the making of weights should be a second nature. Nevertheless, it should be part of the factory system to weigh mixed stocks each day, and check the weights against the compounder's report.

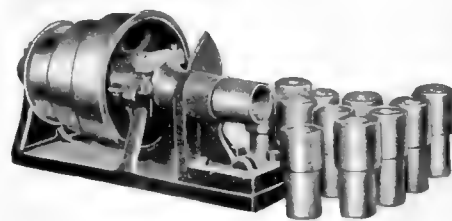
In the general treatment of factory help an exacting but broad gage policy should be pursued. And specially should the inventive faculty be encouraged. Labor saving devices are not uncommon in factories where proper encouragement is held out to the men. The American workman is naturally ingenious, and many a wealthy manufacturer can credit the foundation or continuation of his success to the inventive faculty possessed by some obscure workman in his employ.

To most factories there comes each year a season of dullness. Orders for the season are practically filled, the large contracts satisfied. Then is a good time to provide against next season's requirements by keeping the mills going merrily in reducing waste and scrap to "ground springs," thoroughly drying and sifting them, and storing them away against the urgent demands which are sure to come. This is also a good time in which to overhaul machinery, and give presses and pipes a coat of asphaltum, for no one item speaks so loudly of bad management as dirty appliances, rusty pipes and molds, and machinery out of repair.

The foregoing presents but a small portion of the problems with which the manufacturer of rubber goods is confronted, and which he is expected to solve. A business full of fascination for those who successfully grapple with it and a "hair-raiser" for those who fail.

STOCK CUTTER FOR RUBBER WORK.

THE illustration herewith shows a very convenient and rapid three speed power cutter for rubber work. It is specially adapted for cutting raw stock, from a tubing machine into suitable lengths for molding. The rapidly revolving cam-shaped knife severs the stock with a shearing cut as it is fed



through the proper size die against a stop which determines the length. Several dies, accommodating various sizes or shapes of stock, are shown grouped at one side of the illustration. These permit of cutting any sizes up to $1\frac{1}{2}$ inches diameter and $2\frac{3}{4}$ inches long. Adjustment to required size, by changing dies, can be effected in one minute. The capacity of the machine, when belted according to the recommendation of the makers, ranges from 9000 to 15,000 pieces per hour. Designed and built by Holmes Brothers, No. 218 East Washington street, Chicago.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

AS the demand for motor tires depends so much upon the motor building industry, no excuse need be made for saying a few words upon the latter. Compared with the optimism existing a year ago among manufacturers, a great change is noticeable at the present time, on all sides complaints as to the lack of business being rife. The fact that high priced motors are very difficult to sell may be attributed largely to the general depression in business or depreciation of incomes, with the consequence of there being less money to spend on luxuries. That is, among the well to do people. The wealthy people have bought their cars and do not wish to replace them every month. I was rather amused recently to witness the change in mind of a friend who a year ago told me that "the horse was doomed." At the time he was a motor car owner, only since then he has gone in for building cars and it is the losses he has experienced which have re-opened his eyes to the utility of the condemned horse. From what I can gather this instance is by no means an isolated one, and I hear of cars being sold below cost price to enable their constructors to realize some at least of their shut up capital even at a loss. Not that there is any need to take too gloomy a view of the prospect, because much the same depression exists in certain hunting centers, residences this season being unlet owing to many men having dropped hunting for the time being. The latest firm to go in for the motor manufacture is Crossley Brothers, Limited, of gas engine fame.

AN English half penny daily of wide circulation recently gave prominent notice to a process for manufacturing zinc oxide from waste blende in Wales and a great resuscitation of Welsh mining was confidently predicted. Of course there is nothing new in the idea though this particular process has its novel features, but up to the present none of the oxide prepared in the wet way from the ore has been found equal to that obtained by the combustion of metallic zinc, the source of the Vieille Montague brands. I understand that the newly advertised process has recently been investigated by a rubber manufacturer with results that cannot be considered satisfactory. I remember that some years ago, when a British works manager replaced the Belgian oxide by an American product, he found himself involved in serious trouble.

I NOTICED that a recent French patent (No. 329,519—1903) deals with the use of ammonia in vulcanizing. The goods are to be exposed to an atmosphere of ammonia at 140° C. for 40 or 50 minutes, and before taking out the surplus gas is to be absorbed in sulphuric or hydrochloric acid. Whether the process is now being adopted in France or elsewhere I have no information. I am referring to it chiefly because of its lack of novelty. As far back as 1882, Mr. Thomas Rowley, of Manchester, brought out the same process and obtained results showing that both the amount of sulphur and the time of vulcanization could be much reduced in the case of pure rubber goods, such as tobacco pouches. It must be confessed that though the idea was practically tried at rubber works, it does not appear to have been adopted, probably from the fact that ammonia is both an expensive and disagreeable product to use on a large scale. But I do not profess to be in a position to speak confidently as to the why and where-

fore of its non-adoption. I merely wished to draw attention to the recent patent as being only another instance of an old idea figuring in the patent lists of to-day.

THIS latest addition to the library of the rubber manufacturer will doubtless be reviewed from headquarters, but perhaps I may be allowed space to make a few comments as the result of my own perusal of it. While with his evident disinclination to accept to the full all that has recently been published as to the theory of vulcanization, he will number a large number of sympathizers. I expect there will be a certain amount of opposition to some of his generalizations. For instance, he says that Pará rubber takes longer to vulcanize than East Indian and other more soft and sticky qualities. It would be interesting to hear how far this view coincides with the ideas of other manufacturers on the point as a general statement, though under certain conditions it may hold true. I note that in his reference to rubber sponge (on page 130) he speaks of its want of durability, and tendency to become hard and brittle. This is what I have heard of it from some sources, while others speak of it in terms of much greater commendation. One is rather forced to the belief that the quality as found on the market varies. The vacuum drying of washed rubber is dismissed in a line; it would have been interesting if an author of such wide experience had given us his candid opinion of it. Apropos of this matter, I have recently heard of British manufacturers who are adopting the vacuum process on an increased scale. This book, like all other descriptions of rubber manufacturing, has a description of Gerard's process of vulcanizing in a bath of penta-sulphide of calcium. What would be interesting to know, however, about it, is if it is or ever was in practical use. The statement that the admixture of substitute with many kinds of raw rubbers tends to the preservation of the latter, is interesting, and should not be overlooked by the substitute manufacturers as an advertisement for their wares. Chemistry does not form a prominent subject of reference, though there is one statement that I feel inclined to challenge. He says (on page 236) in reference to Balata that this substance, like Caoutchouc, resists all corroding alkalies and also nitric acid. This is all right as regards alkalies, but surely it is an error to say that nitric acid does not attack it. Of course, as there is so much oxidized rubber in Balata, the action of the acid is not so violent as in the case of rubber, but it is a fact and only in due accord with what one would expect, that nitric acid has a most decided action and I should imagine that the appearance of the paragraph is due to laxity of supervision of the proofs. The other references to Balata are most interesting and the most complete which I have seen in print, though on the moot point as to where all the Balata goes to these pages are not conclusive.

THIS firm of rubber machinery manufacturers, whose works are at Castleton, near Manchester, have issued as a trade catalogue some articles which originally appeared in the *British Colonial and International Machinery Market*, and in which the wood cuts of machinery were supplied by the firm. This brochure is distinct from their larger catalogue which is the most complete of the sort I have seen—that is, where India-rubber and Gutta-percha machinery is exclusively concerned. Compared with American

THE
MOTOR CAR
INDUSTRY.FRANZ CLOUTH'S
BOOK.

ZINC OXIDE.

VULCANIZING
IN AMMONIA.DAVID BRIDGE
& CO.

productions there has always been a sedateness about the British catalogue which I personally have no desire to see transformed. There are, however, adventitious aids to securing attention at which no possible objection can be levelled, and in this category must be placed *inter alia* the catalogue under notice for its technical information, and that of the Dermatine company for its scientific survey of the raw materials from which its products are manufactured.

ONE of the novelties at the forthcoming motor show at the Crystal Palace will be this tire, which has now for some time occupied the attention of the De Nevers Tyre Co. of Bendon Valley, Earlsfield, London, S. W. Greater resiliency is claimed over the ordinary solid tire on account of the transverse grooves on the outer periphery permitting easy expansion on the part immediately under pressure without communicating stress all round. I propose to refer to this tire again when in possession of fuller testimony as to its worth.

THE DE NEVERS
GROOVED
SOLID TIRE.

AS notified in this correspondence some two years ago, this concern was sold by auction to a syndicate who bought it as a speculation and not with any idea of restarting it as a rubber works. In the interval a good deal of the machinery has been sold, and now the whole property has been disposed of to the Stockport company, engaged in the manufacture of Markalite—a rubber substitute brought out by Mr. Markus, who was formerly engaged in the proofing trade at Fleetwood. I cannot say that I have come across any of this substitute, but the fact that the Stockport premises have proved too small for the business, is an indication of a considerable demand.

DROYLES DEN
RUBBER WORKS.

THE Manchester and District Cycle Show held at the St. James Hall from January 30 to February 6 did not produce anything of particular novelty. This year there were no motor cars and but few motor tires were on view.

The three rubber firms having stands were The Dunlop Co., The North British Co., and David Moseley & Sons, the latter showing their "flexifort" fabric, cycle tire tubes and covers, as also solid and "pram" tires. A memento consisting of a pure rubber pipe cover was given to visitors as an index of the quality of the rubber used in their tires. The Dunlop company, besides tires had a display of waterproof clothing, while the North British in addition to their well known makes of cycle tires, had the "Clincher-Michelin" motor tire on view. A special feature of the show as a whole was the motor cycle, which is undoubtedly increasing in popularity.

I EXAMINED recently a sample of liquid cement described as a prepared composition for the repair of cycle tires without the aid of rubber or solution. The solution was described as a patent. I found it to consist of a solution of rubber in bisulphide of carbon and this will at once account for its objectionable smell. I have no wish to say anything disparaging of this particular solution, which I have no doubt answers its purpose admirably, but I rather doubt if it is fair on purchasers to sell it without some warning as to its inflammability. It has been well shown that the dread in which naphtha rubber solution is held by carrying companies is largely due to misconception as to the degree of danger involved but about carbon bisulphide there can be no two opinions as to its danger. I suppose that by rubber solution the carriers understand solution in naphtha and I should think they would have a strong case in the event of an accident arising from the use of a more inflammable solvent. It is stated that this solution rapidly vulcanizes in the air after it is dry; loose statements such as these hardly inspire our confidence as to the technical qualifications of the manufacturers thereof.

MR. J. E. BAXTER, of the Leyland and Birmingham Rubber Co., has left for a tour in South Africa with some members of his family. I understand that he intends to motor from Cape Town to Johannesburg and the run should prove a good test of the capabilities of the Collyer tire.—I regret to announce the death, on January 30, of Mr. Harry Grimshaw, of the Recovered Rubber Co., Limited, and the United Rubber Co., Limited, of Clayton, Manchester.

PERSONAL
MENTION.

Mr. Grimshaw was a chemist of some repute and at one time in his career held the Dalton chemical scholarship at Owens College. In conjunction with Mr. Thomas Rowley he has been closely identified with several departments of the rubber trade for a good many years, his most recent appearance as an author being in a paper on Rubber Analysis, read before the Manchester section of the Society of Chemical Industry last session.—An interesting addendum to some recent remarks of mine in the connection of the rubber trade with Parliament may be made by announcing the selection of Mr. Philip H. Lockhart as Unionist candidate for North Wiltshire. He is a director of Messrs. W. & A. Bates & Co., Limited, of Leicester, and present chairman of the India-rubber Manufacturers' Association. His views on the fiscal question are those of Mr. Chamberlain and it will be interesting to see how far the Rubber Manufacturers' Association will follow his lead.—The retirement of Mr. William Weston from the position of chief chemist to the Admiralty under the age clause of the Civil Service regulations, has just taken place. A good many members of the rubber trade have made Mr. Weston's acquaintance during the long period he has reigned at Portsmouth dockyard and all will testify to his affable demeanor. All the same there are those who wish that the undoubted skill and energy with which he pursued his investigations into alloys and fuels, had led him to examine more closely into the adequacy of the tests which he applied in the case of India-rubber goods. I am not going into details, but my own opinion is that if some of the stringency with which he detected and animated upon an extra tenth per cent. of sulphur had been applied in other directions it would have been more in the interests of strict justice all round.

RUBBER SHOE TRADE IN CANADA.

NEW prices are to be announced by the Canadian rubber shoe manufacturers on March 1, which are expected to represent some such advance as has been made in the United States. The annual meetings of the Rubber Boot and Shoe Manufacturers' Association and the Wholesale Boot and Shoe Jobbers' Association were held at Toronto on January 19. At the Jobbers' convention it was decided to request the manufacturers to put on the market a special line in a second grade men's rubber boot and a second grade boys' and youths' arctic. It was stated that the average sale of men's arctics are 20 of second grade to every one of first grade, and it was urged that the same rule would apply to boys' and youths' arctics if such were available.—The *Canadian Shoe and Leather Journal* says that the rubber shoe business in the Dominion promises to be on a better basis than ever before. The Jobbers' association now embraces every wholesale handler of rubber footwear in the country, and absolute uniformity in selling price is thus assured. It is safe to assume that the discount for early orders will be larger than last year, as well as the regular trade discount. It is a matter of congratulation that the distance between the large store or combination of stores and the ordinary retailer is to be lessened, and a volume point fixed, and any retailer who sells the amount can have the same advantage as the largest buyer.

DEATH OF CARL MARET.

HARBURG (Elbe), January 27, 1904.

GENTLEMEN :

Herewith we discharge the sad duty of informing you of the sad death of

Herr Director CARL MARET,
Imperial Prussian Councillor of Commerce and Senator of
the City of Harburg.

The honored deceased was a member of our company since its foundation, in 1856, and earned the highest merit in furthering its development.

We beg you to retain the deceased in kind remembrance.

Very respectfully,

VEREINIGTE GUMMIWAAREN-FABRIKEN
HARBURG-WIEN,
VORMALS MENIER—J. N. REITHOFFER,
L. HOFF.

THE German rubber industry has sustained a great loss by the death of its Nestor, Director Carl Maret, who died on January 22, after a brief illness, in his seventy-fourth year. Carl Maret was born in Berlin, July 31, 1829. He chose the profession of mechanical engineer, and after devoting several years to that profession at home, he came to the United States to gain further experience. We are without details regarding his life in America, though an early number of THE INDIA RUBBER WORLD mentions him as being employed at one time in the state of New Jersey, and as the India rubber industry had already become important in that state, it is possible that his attention was first directed there to this business.

He returned to Germany in 1856, at which time a new rubber factory was being planned by Albert and Louis Cohn, at Harburg a/d Elbe. Mr. Maret joined in the preparation of the plans, and later he entered the employment of the firm as engineer. Through his untiring devotion to his duties, and his inventive genius, he rose to the position of director of the works, when the company had developed into a rubber manufacturing enterprise of the first magnitude.

The Harburg works originally were equipped for the manufacture of rubber shoes only, but Carl Maret soon took up, with the initial owners of the works, the manufacture of all the new articles which helped to bring the rubber industry to its present importance. Moreover, he was among the first to take an interest in rubber substitutes based on oils, and developed their production in a high degree.

In the early "sixties" the Harburg plant passed from the possession of Aubert Gerard et Cie. to that of Menier, the great Parisian chocolate manufacturer, whose name was a household word all over the world. Menier became a senator soon after the disastrous war of 1870, and the French people, failing to understand how one of their countrymen, and a senator at that, could find employment for a host of their then deadly enemies, such an adverse public opinion was created

among them that he felt obliged to part with his German venture. In 1872, therefore, a syndicate was formed which purchased the Harburg rubber works and also the rubber factory of J. N. Reithoffer—said to be the oldest in the world—at Wimpassing, near Vienna, Austria, the consolidated business taking the name Vereinigte Gummiwaaren-Fabriken, Harburg-Wien, vormals Menier—J. N. Reithoffer, Actiengesellschaft.

On the consummation of the new arrangement, June 1, 1872, Carl Maret entered, as mechanical director, into the board of management, where he remained until the end of his life, contributing very greatly to the continued growth of the company and the high renown which it enjoys. Both of the factories have been directed from Harburg, the Austrian establishment being entirely subordinate to the German. Herr Maret was held in the highest esteem by all the employes, in whose welfare he always displayed the warmest interest. For many years the management of the business has been shared by Louis Hoff, in charge of the commercial department, and likewise a capable and successful business administrator.

Carl Maret found time also for an active part in public life. For 27 years he was connected with the municipal government of the city of Harburg and for 18 years was senator of that city. The most beautiful section of Harburg and the Maretstrasse bear witness of his energy in seeking to improve the city. In legislative matters he rendered valuable services to the government. In all things relating to the rubber industry his opinion was always sought in matters of importance and accepted as final. As an organizer he was exceptionally gifted, and his influence in the Centralverein Deutscher Kautschukwaaren-Fabriken (Association of German Rubber Goods Factories) proved most helpful to the industry. In this connection may be mentioned the work accomplished in relation to the customs tariff, and the action taken in recent years in relation to prices. Only a few weeks ago he was honored by the Emperor with the appointment as Imperial Prussian Councillor of Commerce.

Carl Maret worked unceasingly, in his public and private capacities, until the last days of his ripe old age, leaving a record to be remembered gratefully by the whole German rubber industry.

The funeral of Councillor Maret, on January 26, was a typical illustration of the high esteem and honor in which the deceased was held as well as of the general sorrow caused by his death. The residents of Harburg, the municipal council, and officers and employes of the company were his funerals escort. The interment was in the old cemetery of Harburg, where the Maret family have a burial plot. Harburg buried its best and most honored citizen, and a funeral procession like this was never seen within its walls.

Besides the countless tributes of condolence sent from near and far, many personal friends of the deceased and the firm, the representatives of the principal rubber factories of Germany,



THE LATE CARL MARET.

and Herr Dr. Soetbeer in his capacity as business manager of the Centralverein Deutscher Kautschukwaren-Fabriken had arrived to pay the last tribute of respect to the deceased. The decorations, palms, flowers, and wreaths were innumerable.

The funeral cortege was headed by the band of the Harburg Pionier Battalion, followed by the society of the guard reserves, whose senior was Carl Maret (he served his military duties during 1850-51—a one year volunteer—in the guards), a delegation of the employés of the Harburg rubber works, bearing the floral tributes of the board of directors; then the hearse, followed by the near relatives of the deceased; the chiefs of the imperial and municipal governments, the municipal council of Harburg, the fire department of the Harburg rubber and other factories. Then the branches of the Vereinigte Gummiwaren-Fabriken Harburg-Wien, business friends and representatives of the firm, the whole office force, and the entire corps of employés of the Harburg works. About 2000 persons were in line. Herr Konistorialrat General Superintendent Remmers preached the funeral sermon, after which the coffin was lowered to its resting place.

TRIBUTE FROM THE RUBBER ASSOCIATION.

ON January 22, occurred the death, in his seventy-fourth year, of the president of our society, Imperial Councillor of Commerce and Senator Herr CARL MARET, member of the board of directors of the Vereinigte Gummiwaren-Fabriken, Harburg Wien.

When, in the year 1895, the Verein Deutscher Kautschukwaren-Fabriken was founded, he was elected the first president, and when, in 1898, this society and the Vereinigung Deutscher Gummiwaren-Fabriken were fused into the Centralverein, no doubt existed that in this greater society the presidency belonged to him. As director of the largest German establishment in the rubber industry, aided by years of successful experience in this branch, endowed with exceptional gifts of mind and character, he enjoyed the implicit confidence of his associates. The predominant features in his administration of the affairs of the society were his keen intellect, the broadness of his judgment, the combination of moderation and firmness of his nature, his personal amiability, and his great faculty to reconcile opposing factions and point out to them their allied interests. In high esteem and love, the Centralverein will ever preserve his memory loyally and indelibly.

CENTRALVEREIN DEUTSCHER KAUSCHUKWAREN FABRIKEN.

R. HOFFMANN, Vice President. DR. SOETBEER, Secretary.

Herr Maret has been succeeded in his position in the board of directors, and in charge of the mechanical operation, by Franz Stingl, Imperial Austrian Councillor. Herr Stingl has been connected with the company for 33 years, and has been mechanical superintendent of the Wimpassing factory for 25 years.

DEATHS IN THE AMERICAN RUBBER TRADE.

WILDER F. MCCLINTOCK, vice president and assistant manager of the Stoughton Rubber Co., and in charge of their office at No. 232 Summer street, Boston, died on February 5. About a week previously he had a rupture, and submitted to an operation, which was successful, but he took cold immediately afterward which developed into pneumonia with a speedily fatal result. Mr. McClintock was born 58 years ago at Wiscasset, Maine. About twenty years ago he became connected with the Portland (Maine) store of the Hall Rubber Co., of which he was manager when that company, in 1900, was absorbed by the Stoughton Rubber Co., after which he was transferred to the Boston store of the latter. About four months ago Mr. McClintock was elected vice president of the Stoughton company. The funeral was held at No. 31 Lincoln place, Boston, on February 7, and the interment was at Wiscasset on the next day. He leaves a widow and one son, Edward H. McClintock, of Beverly, Massachusetts. Mr. McClintock was a mason and belonged to the Seaside Lodge of Booth Bay Harbor, Maine. Mr.

McClintock had been a member of the New England Rubber Club since March, 1900, and the Club sent a floral offering to the funeral, besides adopting the following resolutions:

WHEREAS: Death has removed from our midst our friend and fellow member, Wilder F. McClintock, we, the members of the New England Rubber Club, are moved by our sense of loss to record the following resolutions:

Resolved: That in the untimely death of our friend, the trade of New England loses an honorable representative, and our Club one of its valued members.

Resolved: That we extend to his family and to the corporation with which he was for many years so closely identified, our deep sympathy.

Resolved: That these resolutions be spread upon the records of the Club, and copies engrossed and be sent to his family and business associates.

Committee on Resolutions: ARTHUR W. STEDMAN, EUGENE H. CLAPP, GEORGE P. WHITMORE.

* * *

MARK R. HAYNE, secretary of the Alden Rubber Co. (Barberton, Ohio), died at his home in Akron on January 27, of a complication of diseases, after an illness of more than six months. He was born in New York state 56 years ago, and had lived in Akron about 25 years, during which he had become one of the prominent men of the city, through his connection with a number of manufacturing establishments. Mr. Hayne was a man of fine intelligence and cultivated tastes, having a love for the antique and being considerable of a collector. He was a member of the Sons of the American Revolution. He is survived by his wife and a daughter, and mother and brother. Funeral services were held in Akron on January 29, and the interment was at Glendale cemetery, in that city.

* * *

JOSEPH BUCKINGHAM CANFIELD, son of H. O. Canfield, the rubber manufacturer at Bridgeport, Connecticut, and superintendent in his father's factory, died accidentally on the night of February 18 at his home as a result of asphyxiation from coal gas from the house furnace. Mr. Canfield was 33 years of age, a college graduate, a member of the Algonquin and Bridgeport Yacht clubs, and, like his father, prominent in Masonic circles.

LECTURES TO RUBBER WORKERS.

THE course of lectures maintained by The Canadian Rubber Co. of Montreal for the benefit of their employés, and mentioned in the last INDIA RUBBER WORLD, is proving a success. Mr. D. Lorne Gibbon, general manager of the company, reports: "I am glad to say that the lectures are being well attended, and I already notice a disposition on the part of the younger element to acquire further knowledge." Regarding the motive for establishing this lecture course, Mr. Gibbon says: "When I assumed the management of this company I was particularly struck with the lack of knowledge of rubber manufacturing by the general public, and more particularly the people who used the manufactured articles. It occurred to me that those who used rubber goods would be interested in knowing more about it, and the only feasible plan I could think of, was to have our staff acquire more knowledge and be in a position to impart it to our customers and prospective customers. The principal reason, however, that prompted me to give a course of lectures to employés was my desire to interest them in their work, as in my experience, no man can make a success of his work unless he is thoroughly interested in it."

UNDER the new Cuban tariff act, the import duty on manufactures of India-rubber and Gutta-percha the duty has been advanced 30 per cent.

NEW ENGLAND RUBBER CLUB'S ANNUAL DINNER.

THE fifth annual banquet of the New England Rubber Club, at the Hotel Somerset, Boston, on the evening of February 17, was attended by 170 members and guests. It proved a thoroughly successful and enjoyable occasion, in every respect, and was voted by many present to be the best of the social features yet planned by the Club, while the members of the various committees in charge were liberally complimented upon the excellence with which their work had been done.

The invitations had announced that a reception would be held in the handsome parlors of the hotel until 5.50 o'clock, when a bugle call would give notice that the tables were in readiness. The members and their guests were received by the Hon. L. Dewart Apsley, president of the Club; his Excellency John L. Bates, governor of Massachusetts; the Hon. William H. Moody, secretary of the navy of the United States; and the Hon. D. A. De Armond, member of Congress from Missouri, the introductions being made by the Club's reception committee, consisting of Messrs. A. W. Stedman, Joseph Davol, C. C. Converse, F. C. Hood, and R. D. Evans.

Precisely on time the bugle sounded, when the diners formed in procession and, headed by President Apsley and Governor Bates, marched to the beautiful gold and white ballroom of the hotel. The room, beyond its own wealth of ornamentation, bore no decoration—and needed none—except that over the head table were displayed four American flags and the personal flag of the secretary of the navy. Previous to the march each guest had been presented with a printed list indicating his position at table. Every one was pleased with the seating plan, which, instead of providing long rows of tables, showed a number of circular tables, each surrounded by fine gilded chairs. At the head table, reaching across the room, President Apsley was seated, with the guests of honor, as shown in an accompanying plan. A copy of the menu is also presented herewith.

* * *

At 8 o'clock, President Apsley rapped for order and said:

GENTLEMEN: I desire to remind you that the New England Rubber Club was organized some five years ago by about twenty gentlemen and that it now has 190 members. During these years we have met on many similar occasions and it is with pleasure that I recall those enjoyable times. Our midsummer outings have not been less enjoyable, but I am sure that this occasion, both in pleasure and profit, will be remembered longest, and is quite in harmony with the growth of the Club.

These social gatherings are in themselves good, but the desirability and prosperity of this Club rest on something more important, for in no business that I have known anything about has there been so much suspicion and jealousy as there has been in the rubber trade, and I fear that too much of it still exists.

But I can with pleasure state, advisedly, that much of this feeling has disappeared through the better acquaintance with each other made possible by the work of this organization. We are learning that the "other fellow," though not perfect, is not so dishonest as we had imagined, and as a matter of fact is quite as honest as we are.

This Club has the opportunity to wield a powerful influence in this industry, which amounts annually to over \$120,000,000, and I speak quite within bounds when I say that more than one-half of these goods are manufactured in New England. One branch of this industry alone, rubber boots and shoes, can lay claim to over one-third, or about \$45,000,000 of this business, and it is safe to say that from 80 to 85 per cent. of these goods are manufactured in New England. These are large figures, but each year will see them larger, as the country is growing and the demands are increasing. We are exporting rubber goods to about every country on the face of the globe, and since the formation of this Club this export business has increased five-fold.

This organization can exert a powerful influence with its members if it will point out to them the importance and wisdom of manufacturing and sending to foreign countries only goods of a quality that will give satisfaction. Working on these lines, the entire rubber trade and the country at large will say, "Prosperity to the New England Rubber Club."

Gentlemen: I have the very great pleasure of presenting to you His Excellency, John L. Bates, governor of this commonwealth, who will welcome our honored guests.

* * *

GOVERNOR BATES was given a great reception when he arose to welcome the distinguished guests of the club. His first duty, he said, was to extend a welcome, on behalf of the commonwealth, to the Club itself, which he noticed was the New England Rubber Club. "For," he said, "there is very little in New England that does not belong to Massachusetts, and I am sure there is nothing in Massachusetts that New England does not claim."

Remarking that ill winds blew the rubber men good, he said that he judged from the appearance of the assembly that this had been a good winter for the rubber business. He felt that he himself had contributed to their prosperity, for everywhere he had attended a dinner during the season he had lost a pair of rubbers.

Continuing he said:

I am pleased to welcome you, so far as you represent the broader Massachusetts, which is called New England, to the old commonwealth, where the business that you represent was first begun in America. The rubber industry has grown wonderfully within the past twelve or fifteen years, and to-night I recognize that you represent an industry whose product, according to the last census, in Massachusetts alone, was worth something like \$30,000,000, and one that employed 11,000 wage earners, representing at least a town of 55,000 inhabitants, that might be said to be dependent upon the various industries known as the rubber industries of this commonwealth. In extending wishes for your prosperity, I know I am extending wishes for the prosperity of the commonwealth itself.

MENU

	Cotuits, en Coquille	<i>Sauterne</i>
	Tortue Verte, Claire	
Celeri	Radi	Olives
	Alose Planchée, Maitre d'Hotel	
	Pommes Hollandaise	
	Vol-au-Vent, Salpicon	<i>Champagne</i>
	Filet de Bœuf, Moderne	
Pommes Delmonico		Haricot Vert
SORBET A LA RUBBER CLUB		
	Sarcelle Roti	<i>Cigarettes</i>
	Salade de Saison	
Glaces Assorti		Petit Fours <i>Cigars</i>
	Café	<i>Apollinaris</i>

- O George H. Hood
- O Arthur W. Stedman
- O Hon. L. A. Frothingham
- O Hon. George H. Lyman
- O Congressman D. A. DeArmond
- O Governor J. L. Bates
- O Hon. L. D. Apsley, President
- O Secretary William H. Moody
- O Ex-Governor A. O. Bourn
- O George A. Alden
- O Hon. J. J. Myers
- O C. C. Converse.
- O Robert D. Evans

PLAN OF GUESTS' TABLE.

Referring to the presence of a secretary of the navy, Governor Bates remarked that nine times in the history of the country this office had been filled from Massachusetts, and he felt that the present incumbent was a worthy successor to the distinguished sons of the state who had preceded him. Introducing Congressman De Armond, the Governor said:

It is also my pleasant privilege to welcome one who comes this evening as a good Democrat from Bates county, Missouri. [Laughter.] I am hoping that before he gets through this evening he will explain how it is that a Bates county down South sends a Democrat, when no such county would be called a Bates county in Massachusetts. [Applause.] We are glad to welcome him because of what we know of him, a man of convictions, a man of force, a man who is a good and a fair fighter, and a man who represents a great commonwealth. [Applause.]

* * *

PRESIDENT APSLEY next introduced Secretary Moody as follows:

GENTLEMEN: In my brief introductory remarks I referred to the growing importance of the export trade in our branch of industry, and I now call attention to the fact that in order to successfully compete with other countries in the markets of the world, it is essential that the flag of our nation should be respected by those with whom we would do business.

Commerce can only flourish where peaceful conditions prevail and nothing contributes more to peaceful foreign relations than the protection of our rights in every quarter of the globe. This thought is emphasized at this particular time by the conditions in the Far East, where the commercial supremacy of either Russia or Japan, in that territory, so largely depends on the strength of their respective navies.

It is, therefore, quite appropriate that we should be possessed of information regarding the naval equipment of our nation, and we are especially fortunate and feel greatly honored by having with us a citizen of this commonwealth whom all our people delight to honor, one who by his conspicuous services in congress, as well as by the high position he now occupies, has done much to advance the interest of the nation.

I now have the pleasure of introducing the Secretary of the Navy, the Hon. William H. Moody.

* * *

SECRETARY MOODY said that he always took delight in responding to the toast "The Navy." Possibly some present had seen him referred to as "an impressive jingo" in the newspa-

pers, in consequence of his response to the same toast in New York the other night. "I fear that your President," he continued, "from what he has said is in the same class. He stated that while I believed that I was a lover of peace—I know that I am a lover of peace, gentlemen—that while I believed I was a lover of peace, it was only because I believed that peace was best preserved by armament. If that is what he means by being a 'jingo,' I plead guilty to the indictment. If the wish to use a fair proportion of the enormous resources of this country in the defense of the nation's rights upon the sea constitutes 'jingoism,' then again I plead guilty to the indictment. And I have to say that I am in good company. [Applause.]"

He would not call to witness all the distinguished men in American history who had believed with him, but would only refer to George Washington, who, in his second inaugural address said: "The United States ought not to indulge the persuasion that contrary to the order of human events they will forever keep at a distance those painful appeals to arms with which the history of every other nation abounds. If we desire to avoid insult, we must be able to repel it. If we desire to secure peace, one of the most powerful instruments of our rising prosperity, it must be known that we are at all times ready for war." He was quite willing to be called a George Washington jingo. [Applause.]

He referred to the naval features of the war now in progress beyond the Pacific, but it was unnecessary to go to the history of other lands to demonstrate the importance of sea power. No nation had had lessons more sudden and more frequent of the great importance of that power than our own, and he recounted several instances, with the importance of their bearing upon the history of the country. Secretary Moody concluded:

The first duty in time of peace is to prepare the navy so that it shall be instantly ready to perform the function for which it is ultimately designed. We have a big responsibility in the Caribbean sea. It is there the Monroe doctrine has its greatest application, and the Monroe doctrine is just as strong as the navy and no stronger. If we are strong enough to enforce the Monroe doctrine we never shall have to do it. We have a big responsibility to Cuba. We have a big responsibility to the Philippines. I have no doubt that there was much of the lust of land

LIST OF THE CLUB MEMBERS PRESENT AND THEIR GUESTS.

[The members are named first, followed by names of guests "indented."]

George A. Alden	C. C. Lockwood	E. H. Cutler	L. H. Bartlett	John E. Page	A. P. Spear
H. H. Wadleigh	C. H. Arnold	Isaac Crocker	E. D. Hewins	John Abbott	H. B. Sprague
Hon. J. J. Myers,	C. J. Bailey	Joseph Davol	Charles Kellogg	R. E. Paine	George H. Burgess
ex-Speaker Massachusetts	Robert B. Baird	Eben F. Dewing	F. C. Hood	William H. Palmer	A. W. Stedman
legislature	W. T. Baird	R. L. Dorr	Dr. Carl O. Weber	W. H. Johnson	G. Herbert Windeler
E. I. Aldrich	W. E. Barker	J. Frank Dunbar	Arthur Little	John S. Patterson	Hon. L. A. Frothingham
Will L. Stewart	A. L. Robinson	Alexander S. Brown	George H. Hood	Eli Bliss	Speaker Massachusetts
F. H. Appleton	Charles W. Barnes	C. F. Edgarton	John Hopewell	Dr. F. A. Davis	legislature
F. H. Appleton, Jr.	O. A. Barnard	F. C. Hatch	H. Stuart Hotchkiss	W. J. Kent	John W. Wyld
Lewis D. Apsley	Charles H. Sawyer	George P. Eustis	O. R. Howe	D. L. McGibbon	J. H. Stedman
Hon. J. B. Holden	Lawrence T. Sawyer	William R. Dupee	Ernest Jacoby	George Barret	Walter I. Swasey
Hon. J. J. McCarthy,	F. C. Johnson	R. D. Evans	Frederick H. Jones	John Haseltine	Leland T. Powers
collector Port of Boston	A. W. Pope	W. M. Farwell	Arthur G. Walton	A. M. Paul	Dr. Edward Rofle
Gen. W. H. Brigham,	A. F. Bartholomew	F. H. Albee	Charles J. Rich	E. E. Fay	Dr. G. W. Whiting
of Governor Bates's staff	A. O. Bourn	George H. Forsyth	William Keyes	R. J. Owens	Ellis Hollingsworth
A. D. Gleason	H. H. Beddell	Thomas Forsyth	P. D. Langley	M. S. Morley	Benjamin Taft
Thomas F. Taft	S. W. Bourn	John H. Forsyth	William B. Loughton	E. B. Pearson	J. Jackson Todd
Rev. John Baltzly	I. F. Burnham	John N. Cole	J. Henry Bean	W. L. Pitcher	F. W. Veazie
Charles H. Crump	Frank T. Carlton	W. H. Gleason	Frank L. Locke	Jos. W. Green, Jr.	Daniel Clifford
Joseph S. Bradley	R. L. Chipman	D. N. Graves	R. A. Loewenthal	W. B. Powell	Frank Thayer
Milton T. Bailey	A. W. Clapp	Horace Albers	H. C. Mason	Edward R. Rice	E. E. Wadbrook
Charles F. Hamilton	E. H. Clapp	William N. Homer	George H. Mayo	J. M. Rice	H. F. Wanning
George A. Reardon	W. C. Coleman	N. Lincoln Greene	W. H. Mayo	Thomas G. Richards	John F. Wheeler
Col. E. H. Woods,	A. L. Comstock	G. Edward Habrick	C. H. McDermott	P. L. Rider	Frank N. White
Boston Herald	F. K. Guth	J. E. Martin	John J. McGill	Captain F. L. Allen	Howard B. White
D. J. Lord	C. C. Converse	J. H. Hebard	Otto Meyer	T. J. Skinner	George P. Whitmore
Henry Tower	I. W. Chick	E. A. Hebard	Charles A. Morse, Jr.	Ellsworth H. Hicks	E. S. Williams
R. S. Osterhout	Newton Crane		Fred L. Moses	J. H. D. Smith	
R. C. Hall					

which is characteristic of our race, much of the desire to be a great world power in the taking of the Philippines, but I believe the underlying motive in taking them was the same as that which induced us to give up Cuba. We must defend those islands.

We have 26,000 miles of seacoast to defend—more than any nation except Great Britain. Leave it undefended and it is a pathway to our enemies. Defended it is your greatest safeguard. We have no entangling alliance with any other country and we shall enter into none. We shall defend ourselves. Let us then be backed with God and with the seas, which he hath given us for defense, impregnable, and with their help alone defend ourselves. In them and in ourselves our safety lies. [Applause.]

* * *

PRESIDENT APSLEY next introduced Congressman DeArmond, saying:

GENTLEMEN: It may fairly be presumed that the members of this Club have their minds largely centered upon questions which have special connection with the rubber business, but we do not forget that we are not only manufacturers and merchants, but citizens of the United States as well, and are, therefore, deeply interested in all that concerns the conducting of the business of our government, whether state or national, and we certainly desire that the power of the professional politician or the supposed interest of political parties may not interfere with effective work on the part of all those who are in any way connected with it.

It is a great pleasure to me, personally, and the Club is to be heartily congratulated on having here to night one of the very foremost men in the national house of representatives, a gentleman of the highest possible character, and eminently qualified to handle the important subject of "Civil Service Reform."

I now have the honor of presenting to you the Hon. David A. DeArmond, of Missouri.

* * *

CONGRESSMAN DEARMOND, who was enthusiastically received, after paying a high tribute to the American navy, said:

I have been convinced for some time that there is a great mistake committed by making the tenure in the civil service practically for life. I believe it is contrary to the genius of our institutions. I believe under our system that the people ought occasionally, and perhaps quite frequently, to have the opportunity to determine whether a man shall continue in the public service or not. I believe the effect of putting a number of men into the public service under a system which leaves many of them there for life is bad. The first thing, under the present system, is to get into the public service, with a reasonable assurance that you may continue in it; the next thing is to lessen the amount of services you perform and increase the amount of compensation you receive. That is human nature. Don't exhaust the job too soon. Don't do too much. [Laughter.]

I believe it would be better if persons were appointed to the civil service for a definite period of time. Then there would be constantly present in the mind of the employé the condition that in order to get an extension of time by reappointment, it would be necessary for him to prove himself efficient and reliable.

Let me suggest, if there is anything in this matter of turns, that it is about time we had our turn in the administration of national affairs. [Laughter.] It is a great relief in an executive officer not to have control of patronage absolutely, merely to peddle out to party workers—not that I decry the party worker—but for Tom, Dick, and Harry to press upon a man who has many public duties, to perform the important one of putting them into public employment, is really to wear out men who might devote their time to more useful pursuits. I have no doubt my friend, the secretary of the navy, appreciates that, great partisan as he is, and a man can be a good partisan even though he is on the wrong side, as he is. [Laughter.]

The great desideratum in public affairs is absolute honesty. I believe one of the most profitable things this country has done in recent years was parting with Cuba, when this country had the power to hold it. It was not only honorable and creditable in us, but beneficial to us for generations to come.

At the conclusion of the speech making, "Home, Sweet Home" was played by the orchestra, while the members departed for their homes, all voting the banquet a marked success. In this connection should be named the members of the various committees having charge of the arrangements:

Dinner Committee.—Frederick H. Jones, William Keyes, George P. Whitmore, William J. Kelly, O. A. Barnard.

Entertainment Committee.—Arthur W. Stedman, William F. Mayo, E. S. Williams, Henry C. Pearson, Theodore S. Bassett.

Reception Committee.—Arthur W. Stedman, Joseph Davol, Costello C. Converse, Frederick C. Hood, Robert D. Evans.

One of the pleasant features of the evening was the presence of a number of ladies in the boxes in the balcony, who watched the proceedings with interest to the end. It was the first occasion when ladies had been present at one of the Club's entertainments. One party was made up of the wives of President L. D. Apsley and Colonel E. H. Woods, of the Boston *Herald*, and a number of their friends.

MANUFACTURE OF WEATHER STRIPS.

ONE of the many minor lines of manufacture in which rubber forms an important part is that of ordinary weather strips for doors and sashes. These useful and sanitary appliances generally utilize only low grade reclaimed stock, usually in the form of rubber coated sheeting and light cloth insertion packing. A common method of combining the rubber with either wood or metal strips is in the form of an open tubular fold of sheeting, with the edges held securely in the body of the strip. This form is known as the "double edge" or "cushion" style, as distinguished from the single edge of flat rubber packing formerly more commonly employed.

In making the newer or double edge strip the rubber sheeting is first cut very accurately parallel by rapidly drawing the fabric between sharp knives set at proper intervals in a bench. The edges are next glued by a simple device and are then ready for insertion in the prepared molding, which contains two fine parallel lengthwise cuts to receive the glued edges of the rubber strip. The latter is quickly inserted into the cuts by the aid of a simple grooved hand block or die, which folds and fits the rubber into its place. These wood weather strips are made in numerous neat designs, sizes, and forms, adapted to every requirement of location.

More attractive and durable, however, are the extremely neat forms of weather strip attained by substituting thin sheet metal—brass, zinc, or copper—for the clumsy wood moldings. This newer form combines the merits of flexibility, durability, and compactness. It is very inconspicuous when applied and is the only kind adapted to many locations, as around sashes of railway coaches for excluding dust and preventing vibration. These rubber strips vary in width from $\frac{3}{8}$ to $\frac{3}{4}$ of an inch, and are frequently made continuous in 100 feet lengths.

The manufacture of these strips is accomplished by swift automatic machines with special dies and folding devices to form the flat metal ribbon into neatly curved and creased backs, with edges closely folded in to avoid cutting the rubber surfaces, yet holding the rubber strip in a compact grip. After forming the strip the machine automatically punches through the metal back small holes at regular intervals for allowing the passage of the brads used in applying the strip. These still further aid to hold the rubber in place.

MESSRS. EARLE BROTHERS, India-rubber brokers, No. 66 Broad street, New York, have favored THE INDIA RUBBER WORLD with a copy of their annual Rubber Statistics for 1903—a publication which has appeared regularly so many years.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED JANUARY 5, 1904.

- N**O. 748,742. Hose coupling. Jefferson Jefery, Newcastle, Pa.
- 748,775. Wheel [with special rim for retaining rubber tire]. J. B. McMullen, Howard county, Md.
- 748,798. Art of manufacturing hose. H. H. Shepard and F. H. Fish, Bristol, R. I.
- 748,858. Cover for elastic tires [the new feature in the Palmer tire]. Christian H. Gray, Silvertown, and T. Sloper, Devizes, England.
- 748,937. Holder for the stoppers of water bottles. A. C. Eggers, New York city, assignor to Goodyear's India Rubber Glove Manufacturing Co.
- 748,953. Tool for seating rubber tires in rim channels. W. S. Jacobs, Malden, Mass.
- 748,996. Mold. J. F. Spencer, Philadelphia.
- 749,053. Golf ball. Charles J. Grist, Apsley, Banstead, England.

Trade Mark.

- 41,800. Certain named rubber goods. The Flexible Rubber Goods Co., Winstead, Conn. *Essential feature.*—The word "Vita." Used since October 2, 1901.

ISSUED JANUARY 12, 1904.

- 749,180. Surgical pan. A. Galloway, Xenia, Ohio.
- 749,253. Hose coupling. J. Ballenberger and C. Scheidemantel, Pittsburgh, Pa.
- 749,299. Elastic tread horseshoe. A. W. Jones, Pacific Grove, Cal., assignor to J. S. Tait, Washington, D. C.
- 749,483. Hose coupling [for steam hose for trains]. E. E. Gold, New York city.
- 749,496. Hose coupling. Henry S. Patterson, Ravenna, Ohio, and Herbert S. Patterson, Scenery Hill, Pa.
- 749,633. Electrical hose signaling apparatus. W. G. Seeley, Brookline, Mass.

Trade Marks.

- 41,847. India-rubber pencil erasers. L. & C. Hardtmuth, Vienna and Budweis, Austria-Hungary, and London, England. *Essential feature.*—The letter "H," two stars, and a circle surrounding the letter "H" and the stars. Used since January 1, 1879.
- 41,852. Elastic webbing fabric and goring. Boston Gore and Web Manufacturing Co., Boston and Chelsea, Mass. *Essential feature.*—An oval-shaped band surrounding the letter "B". Used since April, 1894.

ISSUED JANUARY 19, 1904.

- 749,774. Paint sprayer. H. R. Cooper, Sr., Butler, Pa.
- 749,830. Vehicle tire. J. Q. Work, Lamar, Mo.
- 749,840. Rim for vehicle wheels [with flange for retaining pneumatic tire]. S. Butler, Westbury-upon-Trym, England.
- 749,845. Cushion tire. J. Coomber, assignor of three-fourths to J. Caldwell, H. E. Wood, and A. C. Gifford, all of New York city.
- 749,978. Composite block for soft treads and method of making same. C. W. Zaring, New York city.
- 750,000. Vehicle tire. E. F. McArdle, New York city.
- 750,023. Tire. G. M. Depew, Canandaigua, N. Y.
- 750,103. Bed pan. A. C. Eggers, New York city, assignor to Goodyear's India Rubber Glove Manufacturing Co.
- 750,104. Throat bag. *Same.*

Trade Mark.

- 41,905. Rubber sponges. Russian-American India Rubber Co., St. Petersburg. *Essential feature.*—A triangle containing within it the figures "1860" and the letters "T P A P M." Used since January, 1888.

ISSUED JANUARY 26, 1904.

- 750,249. Protective band for pneumatic tire. H. Brooks, Stirchley, England.
- 750,271. Fountain pen. A. Eberstein, assignor to C. Brandt and C. E. Brandt, all of Boston.
- 750,276. Vaginal syringe. F. J. Gruss, San Francisco.
- 750,297. Nasal douche. F. W. Moffitt, Chicago.
- 750,340. Hose pipe fastening. F. Bissing, Kreuzlingen, Switzerland.
- 750,857. Household implement [brush head]. R. Gibbons (J. K. Beach, administrator), New York city.
- 750,379. Pneumatic tired wheel. T. Lindenberg, Columbus, Ohio.
- 750,430. Fountain pen. F. C. Brown, New York city.

- 750,521. Atomizer. F. V. Braymer, assignor of one third to C. W. Braymer, both of Blooming Valley, Pa.
- 750,546. Fountain pen. F. M. Kegrize, Philadelphia.
- 750,571. Pneumatic seat. C. L. Berger, Richmond, Ind., assignor of one half to R. Morrow, Minneapolis, Minn.
- 750,583. Fountain pen. F. C. Brown, New Brighton, N. Y.
- 750,647. Vehicle tire protector. F. B. Yayden, Belleville, N. J.
- 750,780. Elastic band or strap. J. D. O'Brien, Boston.

Design.

- 36,761. Tiling. A. A. Spadone, New York city.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1903.

[* Denotes Applications from the United States.]

- 26,598. G. E. Osmond and S. Feast, London. Repair bands for pneumatic tires. Dec. 4.
- 26,599. G. E. Osmond, London. Pneumatic tire. Dec. 4.
- 26,608. F. W. Barratt, Wimborne. Inflatable tire. Dec. 5.
- 26,658. H. Williamson, Liverpool. Fire hose apparatus. Dec. 5.
- 26,717. H. R. Weaver, London. Pneumatic vehicle tire. Dec. 7.
- 26,789. J. Balog, London. Fountain pen. Dec. 7.
- 26,805. F. W. Mitchell, Seven Kings, Essex. Rubber bath glove. Dec. 8.
- 26,880. G. H. Hickson, London. Heel protector for boots. Dec. 8.
- 26,955. H. L. Todd, London. Fountain pen. Dec. 9.
- 26,985. G. Sutton, London. Golf ball. Dec. 9.
- 27,009. J. T. Sutcliffe, Burnley. Adjustable heel for boots. Dec. 10.
- 27,016. F. H. Barker, Manchester. Rubber heels for boots. Dec. 10.
- 27,078. B. Couverchel and J. Billett, London. Anti-skidding cover for pneumatic tire. Dec. 10.
- 27,065. F. Woodgates and T. W. Jourdan, London. Material for repairing pneumatic tires. Dec. 10.
- 27,091. J. S. Smith, London. Pneumatic tire. Dec. 10.
- 27,092. G. Radmore, London. Rubber tire for vehicles. Dec. 10.
- 27,187. J. Y. Johnson, London. Improvement in wheels for vehicles having pneumatic tires. (Soc. An. des Forges de Douai, France.) Dec. 11.
- 27,240. G. Brown, Glasgow. Revolving heel pad. Dec. 12.
- 27,243. W. H. Castlehouse, E. P. Castlehouse, and C. D. Burton, Scarborough. Tire for motor cars. Dec. 12.
- 27,247. F. H. Barker, Manchester. Rubber heel for boots. Dec. 12.
- 27,260. F. Tolkien, London. Tire for motor and cycles. Dec. 12.
- 27,320. H. S. Eyre, St. Leonards-on-Sea. Device to prevent side slip in pneumatic tires. Dec. 24.
- 27,391. E. Michelin, London. Lever for manipulating the covers of pneumatic tires. Dec. 14.
- 27,499. W. H. Simons, London. Removable heel for boots. Dec. 15.
- 27,512. H. Hessenmüller, London. Pneumatic hammer, more especially for working curved surfaces on a circular plane, such as resilient rings for tires. Dec. 15.
- 27,520. E. C. Pope-Sadler, Kew. Tread for pneumatic tires, to prevent side slip or puncture. Dec. 15.
- 27,534. C. H. Wilkinson, Huddersfield. Device to prevent slipping of wheels. Dec. 16.
- 27,629. E. E. Bernhard, London. Non-slipping band for pneumatic tires. Dec. 16.
- 27,716. A. T. Collier, London. Elastic tire for vehicles. Dec. 17.
- 27,723. P. J. Troquette, London. Resilient tire. Dec. 17.
- 27,747. R. Wallwork and C. H. Wallwork, Manchester. Means of attaching covers to pneumatic tires. Dec. 18.
- 27,856. A. J. Howard, Leicester. Non-slipping device for pneumatic tires. Dec. 19.
- 27,871. L. Batt, Sheffield. Tire for road vehicles. Dec. 19.
- 27,955. David Moseley and B. Blundstone, Manchester. Vehicle tire. Dec. 21.
- 28,120. S. Harrison and A. Harrison, Burnley. Revolving heel pad. Dec. 22.
- 28,152. C. T. Kingzett, London. Manufacture of golf balls. Dec. 22.
- 28,161. A. H. Minns, London. Heel pad. Dec. 22.
- 28,190. Martin Lindner, London. Apparatus for vulcanizing under pressure. Dec. 22.

- 28,207. F. Reddaway, Manchester. Securing pneumatic tires to rims. Dec. 23.
- 28,233. E. Greg and T. H. Hirst, London. Manufacture of motor tires. Dec. 23.
- 28,294. H. L. Alderson, Stafford. Non-slip boot protector. Dec. 24.
- 28,323. J. E. Mortimer, Portsmouth. Valve for pneumatic cushions. Dec. 24.
- *28,353. Augustus O. Bourn, 52, Chancery Lane, London. Process of vulcanizing rubber. Dec. 24.
- 28,371. L. Azulay, London. Pneumatic tire. Dec. 24.
- 28,437. T. S. Fordes, London. Resilient tire for motors. Dec. 28.
- 28,500. E. E. Hopkinson and J. E. Hopkinson & Co., Limited, London. Elastic tire for vehicles. Dec. 28.
- *28,545. W. G. Heys, Manchester. Machine for covering wire with insulating material. (W. E. Ammon, United States.) Dec. 29.
- 28,664. J. Dexter, London. Leakage cover for fire hose. Dec. 30.
- 28,675. R. J. Peach, Birmingham. Puncture finder for inflated tires. Dec. 30.
- 28,691. The Dunlop Rubber Co., Limited, and J. W. O. Walker, London. Tire for vehicles. Dec. 30.
- 28,705. A. C. Williams, London. Non-slipping cushion heel pad. Dec. 31.
- 28,720. J. Harrington, Brighton. Protective tire tread for outer cover for tires. Dec. 31.
- 28,809. E. Sedgwick, Canterbury. Revolving heel. Dec. 31.
- 28,817. D. B. Jacob, London. Non slipping device for pneumatic tires. Dec. 31.

APPLICATIONS—1904.

28. Oswald G. Moseley, Manchester. Pneumatic tire and fabric therefor. Jan. 1.
49. Albert C. Hills, Coventry. Elastic tire. Jan. 1.
58. D. Howard, London. Anti-side slip device for pneumatic tired wheel. Jan. 1.
62. W. C. Hawtin, London. Heel pad. Jan. 1.
- *75. W. P. Thompson, Liverpool. Elastic tread horseshoe. (J. S. Tait, United States.) Jan. 1.
90. A. J. Boulton, London. Puncture closer for tires. (Baron R. Peronne de Sennevoy, France.) Jan. 1.
148. R. S. Wood, Manchester. Pneumatic tire. Jan. 4.
173. R. F. Davis, London. "Davis" patent heel. Jan. 4.
213. J. U. Burt, London. Means of securing resilient tires to wheels. Jan. 4.
255. S. E. Burrow, Leeds. Waterproof shield for cyclists. Jan. 5.
271. S. Johnson, London. Wheel rim with rubber tire. Jan. 5.
277. H. A. Rogers, London. Waterproof garment. Jan. 5.
288. J. Marks, London. Hose coupling. Jan. 5.
298. C. Mercades, London. Improvement in vehicles having pneumatic tires. Jan. 5.
356. R. A. Kent, London. Tire composed of rubber core and a rubber covering. Jan. 6.
369. L. J. Cole, London. Reservoir pen. Jan. 6.
374. Christian H. Gray, London. Improved tennis ball. Jan. 6.
377. T. M. Thom, H. R. Gregory, and G. Merrylees, London. Treatment of waste vulcanized rubber. Jan. 6.
419. H. Asprey, Burley, Yorkshire. Duplicate non-puncturable motor cycle tire. Jan. 7.
428. E. T. Cheer and W. Tess, Upton Park, Essex. Rim for motor car. Jan. 7.
430. J. Hill, Hawick, Scotland. Pneumatic tire cover. Jan. 7.
469. E. Cleary, London. Tire for vehicle. Jan. 7.
525. Céleste Joly and Reginald Boucher, London. Elastic wheel. Jan. 8.
537. The Dunlop Rubber Co., Limited, and J. V. Worthington, London. Inflatable playing ball. Jan. 8.
596. E. Niederhäuser, Cologne, Germany. Jacket of lamellæ for pneumatic tires. Jan. 9.
647. W. Foster and B. S. Foster, Leeds. Revolving heel pad. Jan. 11.
654. A. W. Mackenzie and J. Ross, London. Wheel rim and tire. Jan. 11.
749. W. E. Harker, Tynemouth, Northumberland. Prevention of punctures in tires. Jan. 12.
- *758. W. G. Heys, Manchester. Insulating electrical conductors. (W. E. Ammon, United States.) Jan. 12.
800. L. Johnstone, London. Pneumatic or cushion or other rubber tire for vehicles. Jan. 12.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 1, 1903.]

- *18,734 (1902). Elastic tire for vehicles. W. I. Gregory, Springfield, Massachusetts.
- *18,737 (1902). Vehicle wheel rim [adapted to pneumatic or other elastic tires]. J. Baker, Meacham, Illinois.
- *18,738 (1902). Elastic stocking. W. F. Ware and W. R. Cartledge, Philadelphia.
- *18,745 (1902). Vehicle tire [of solid rubber; attached to the channel shaped rim by endless wires embedded in the tire during manufacture, so as to pass through projecting eyelets]. H. C. Haines and W. E. Huber, Chicago.
- 18,959 (1902). Syringe [for horticultural use]. W. Ring, Regensburg, and F. H. Mayr, Friedberg, Bavaria.
- 19,043 (1902). Powder blower [for administering medicines]. J. G. Glass, Edinburgh.
- 19,062 (1902). Rubber boot heel. H. Holt, Roath, Cardiff.
- 19,127 (1902). Golf ball [with Gutta-percha core covered with alternate layers of rubber and gutta, and an outer casing of Gutta-percha]. T. Cockburn, Newcastle-on-Tyne.
- 19,188 (1902). Inflatable life belt. J. Ewing, Richmond, Quebec.
- 19,189 (1902). Inflatable life belt. J. Ewing, Richmond, Quebec.
- 19,242 (1902). Golf club [with leather striking plate, cushioned by an elastic pad]. E. J. Byrne, Erdington, Warwickshire.

[ABSTRACTED IN THE OFFICIAL JOURNAL, DECEMBER 1, 1903.]

- 19,324 (1902). Bottle stopper. M. M. Dessau, Merton, Surrey.
- 19,366 (1902). Electric cable. W. E. Hitch, Birmingham.
- 19,424 (1902). Surgical truss. F. Kiesel, Vienna.
- *19,506 (1902). Billiard cushion. G. C. Dymond, Liverpool. (B. A. Stevens, Toledo, Ohio.)
- 19,675 (1902). Golf club [with pneumatic cushioned striking face]. W. Taylor, Banark.
- 19,704 (1902). Vehicle wheel and rubber tire. A. Whiteway, Sale, Cheshire, and Charles Macintosh & Co., Limited.
- 19,754 (1902). Pneumatic and solid rubber tire combined. A. Tobler and H. Samuel, London.
- 19,755 (1902). Circular heel pad. G. H. Hickson, Stockton-on-Tees.
- 19,794 (1902). Swimming apparatus [of waterproof material for attachment to the foot]. H. Höhmann, Barmen, Germany.
- 20,081 (1902). Devulcanization of India-rubber. A. E. J. V. G. Theilgaard, Copenhagen, Denmark.
- 20,087 (1902). Pneumatic tire [relates to means for attaching the edges of the cover to wheel rims by extensible coiled wire rings]. F. Reddaway and J. Muskett, Manchester.
- 20,105 (1902). Heel protector. A. Dickinson, Halifax.
- *20,129 (1902). Umbilical bandage. C. J. Higgins, Wanaiah, Indiana.
- 20,208 (1902). Packing for stuffing-boxes and gage-glasses. J. Dewrance, Southwark.
- *20,405 (1902). Pneumatic tire [detachable, with means for securing same; the tire made by the Fisk Rubber Co.]. J. C. Cole, Chicopee Falls, Massachusetts.
- 20,449 (1902). Button [for clothing]. W. H. Forsyth, Bristol.
- 20,471 (1902). Syringe. R. J. Reuter and A. B. V. Taffs, London.
- 20,530 (1902). Exercising apparatus. A. E. Terry, Redditch.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JANUARY 20, 1904.]

- 20,667 (1902). Heel and sole piece for boots. T. Burrell, North Melbourne, and E. C. Perdriau, Melbourne, Australia.
- 20,737 (1902). Boot protector. A. W. Mantle and J. P. Frisby, Desborough, Northamptonshire.
- *20,744 (1902). Reservoir pen. R. B. Dickie, Kenosha, Wisconsin.
- *20,749 (1902). Pneumatic tire [with series of air tubes communicating with one inflating valve]. C. E. Thomas, Tucson, Arizona.
- 20,790 (1902). Revolving heel pad. J. T. Crossgrove, Stockton-on-Tees.
- 20,808 (1902). Revolving heel pad. A. Briggs, Market Harborough, Leicestershire.
- 20,812 (1902). Sanitary utensil cover. J. W. Fearnley and T. Wood, Newtown in Leeds.
- 20,827 (1902). Pneumatic tire. G. H. Hastings, Oporto, Portugal.
- 20,896 (1902). Punching machine for rubber and other belting. W. H. Baxter, Leeds.
- 20,910 (1902). India-rubber substitute [gum obtained from a Mexican plant that the patentee calls *Synantheras Mexicanas*, which name

he seems also to have invented]. William Prampolini, San Louis Potosi, Mexico.

- 20,962 (1902). Pneumatic tire. W. Smith, London.
 21,100 (1902). Pneumatic tire [protected from puncture by an aluminum tread strip]. E. A. Hilder, Kentish Town, London.
 21,129 (1902). Golf ball [with core of wound rubber thread]. P. M. Matthew and C. R. Crombie, Victoria India Rubber Mills, Edinburgh.
 *21,200 (1902). Exercising apparatus. G. S. Maxwell, Madison, and G. White, Jersey City, New Jersey.

GERMAN EMPIRE.

PATENTS GRANTED.

- 149,149 (Class 30b). Vulcanizing oven. W. Reinhard, Berlin. March 22.
 DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].
 213,805 (Class 3b). Textile fabrics underlaid with mass of natural rubber to serve as waterproofing for cloths, being attached with a ho iron instead of sewing. C. Thill, Cologne. Dec. 23.
 213,696 (Cl. 28b). Rubber cover for work table in leather working machine, with arrangement for padding in the middle. Vaughn Machine Co., G. m b. H., Frankfurt a/M. Dec. 23.
 213,567 (Cl. 45f). Horseshoe of hard rubber with rubber cushions, hollow on under side to prevent slipping. F. Lindner, Breslau. Dec. 23.
 213,959 (Cl. 63c). Steel protective tire covered with rubber. Frieda Winkler, Ofenerfeld, bei Oldenberg. Dec. 30.
 214,413 (Cl. 47f). Linen lined rubber hose, with spiral metallic band, for conveying gas to railroad cars. H. Schwieder, Dresden. Jan. 13.
 214,044 (Cl. 12f). Automatic siphon of soft rubber with return valve. A. Kahlert, Hamburg. Nov. 3.
 214,135 (Cl. 30d). Warm compresses, consisting of hollow rubber cushions of size and shape of the eye cavity, provided with means of filling and fastening, single, and triangular in shape. Hill u. Müller, Mannheim. Nov. 26.
 214,136 (Cl. 30d). Warm compresses for diseased eyes, consisting of hollow rubber cushions with means of filling and fastening, shaped like spectacles to cover both eyes. *Same*. Nov. 26.
 214,062 (Cl. 30g). Nipple for nursing bottle, consisting of solid mouth-piece pierced by numerous canals. Dr. W. Krohn, Dresden. Nov. 24.

APPLICATIONS.

- 8,853 (Class 3c). Air cushion adapted to be heated. E. Titters, Kaiserslauten. April 15.
 8,375 (Cl. 63c). Process for making endless self sealing air tubes for tires. C. Stoeckicht, Frankfurt a/M. Aug. 22.
 14,713 (Cl. 39a). Appliance for cold vulcanizing rubber goods. T. Pongs, Cöln-Ehrenfeld. Dec. 23.
 35,546 (Cl. 43a). Capsule for rubber rings. R. Bürk, Schweinigen. Jan. 6, 1904.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATE OF APPLICATION).

- 335,087 (Sept. 8, 1903). Barnault and Binet—Protection for pneumatic tires.
 335,104 (Sept. 9, 1903). S. Butler—Improvements in automobile wheel tire rims.
 335,159 (Sept. 11, 1903). R. Bobet—Improvements in the manufacture of pneumatic tire covers.
 335,173 (Sept. 12, 1903). Société Geoffroy et Delore—Process of packing and for preserving air tubes of pneumatic tires.
 335,185 (Sept. 14, 1903). Cooper and Smith—Pneumatic tire, with special felly.
 335,211 (Aug. 14, 1903). Franchomme—Unpuncturable pneumatic.
 335,388 (Sept. 16, 1903). C. J. Pigeon—Tires for vehicle wheels.
 335,469 (Sept. 22, 1903). Thropp and de Laski—Tires with circular woven fabric.
 335,584 (Sept. 26, 1903). E. H. Fayolle—Process for the manufacture of a substitute for Caoutchouc.
 335,940 (Sept. 18, 1903). Perrot—Pneumatic tires having several air tubes.
 335,896 (Oct. 14, 1903). Voland and Garambois—Application of a new fabric in the manufacture of air tubes and for pneumatic tire covers.
 335,826 (Oct. 8, 1903). Delorme—Pneumatic tire cover.
 336,071 (Oct. 7, 1903). A. Voland—New elastic tire for bicycles and automobiles.

[NOTE.—Printed copies of specifications of French patents may be ordered from R. Bobet, Ingenieur-Consul, 16, avenue de Villiers, Paris, at 50 cents cash, post paid.]

AN OLD RUBBER MAN RETIRES.

ONE of the oldest rubber workers in the country has lately retired from the employment of the Goodyear's India Rubber Glove Manufacturing Co., at Naugatuck—Mr. Cyrenius N. Squires. Mr. Squires was born in Redding, Connecticut, January 25, 1832, and in 1850 secured employment in the rubber factory of John Greacen, Jr., at Sandy Hook. In 1852, he removed to Naugatuck and went to work as a cutter in the plant of the Union India Rubber Co., which later was occupied by the Goodyear's India Rubber Glove Manufacturing Co. In 1861 he enlisted in the army, but at the end of two years returned to the factory at Naugatuck, where he remained as foreman of the clothing department until early in the present year.

Mr. Squires, among other details supplied to THE INDIA RUBBER WORLD, says: "I built and used the first dry steam vulcanizer for curing rubber goods. Our old vulcanizer was built of brick, about 20 feet square, with coils of stove pipe on the floor and ceiling, through which hot air, direct from the furnace, was forced. The coats were cemented and hung inside the room to be cured, and often taken out worthless on account of being over cured. I thought that the work could be done better with steam pipes, and after much opposition was finally allowed to experiment. The new plan proved a success from the first."

Mr. Squires states that about 28 years ago P. T. Barnum exhibited a white elephant in this country. His competitor in the circus business, not wishing to be outdone, asked the Glove company to make him an elephant of white rubber. Mr. Squires was their pattern maker, and the work was put into his hands. The showman was so pleased with the first result that he ordered six, and advertised not one white elephant but a whole herd. He mentions that the late George M. Allerton, B. M. Hotchkiss, and others connected with the Glove company went to New York to see the inflated rubber elephants exhibited.

Mr. Squires had four sons, whom he introduced into the rubber business as soon as they left school, and three of them are still rubber men. Eugene D. holds his father's former position as foreman of the clothing department; Arthur C. is with The B. F. Goodrich Co. at Akron; and George S. with the Conant Rubber Co. in Boston. Mr. Squires will now make his home at Bridgeport, with his daughter, who is the wife of Noyes E. Alling, president of the Alling Rubber Co., operating several retail stores in Connecticut. Never having had a day's illness, Mr. Squires appears hale and hearty. He treasures among the mementoes of his connection with the Glove company a gold watch presented to him by the employes of his department about 25 years ago. During his long residence in Naugatuck he was one of the most respected citizens of the place.

RUBBERS AND LEATHER SHOES.—There are good arguments for the wearing of rubber shoes, even for those who do not believe it necessary to keep their feet dry in snowy weather. The water made by melting snow has an especially injurious effect on leather. It destroys the leather rapidly, and shoes subject to such treatment will wear out in a very short time unless they are protected by overshoes.—*New York Sun*.

RUBBER TIRED RICKISHAS.—The *Strait Times* reports the introduction on the streets of Singapore of fifty smart looking rubber tired jinrickishas, to be hired at higher than the usual rates. They are owned by a syndicate, which expects to find it necessary soon to increase the number.—Rubber tired jinrickishas have been made for several years at Reading, Pennsylvania, for export to Yokohama.

THE MANUFACTURE OF WOOL AND KNIT BOOTS.

THERE is no make of footwear more comfortable or better adapted for the use of the farmer, lumberman, and other workers exposed to the severe cold of a northern winter, than the uncouth knit or felt boot, with foot

encased in stout rubber "perfection" shoe. The reason is that the porous light weight wool structure not only affords warmth by the nonconducting effect of the included air, but also permits enough ventilation to keep the feet dry.

These goods are manufactured by the Mishawaka Woolen Manufacturing Co., under the patents of the late Messrs. Beiger and Eberhart, former president and superintendent respectively of the company. The mills of the company are situated at Mishawaka, Indiana, on the St. Joe river, and are operated by water and steam power. The plant is modern in every respect and has been undergoing constant enlargement for the past six years. The present daily output is 6500 pairs of boots, besides socks and a general line of heavy rubber footwear.

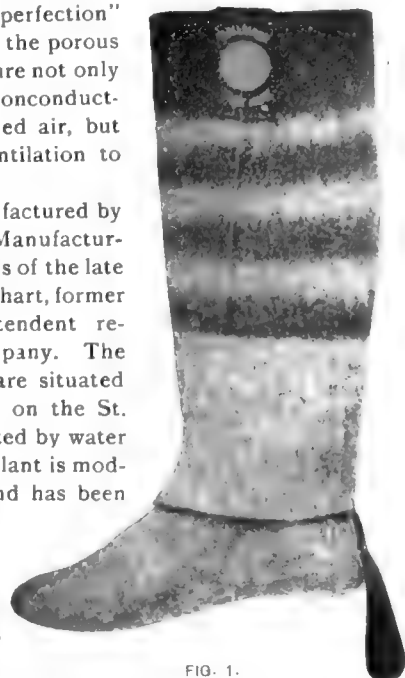


FIG. 1.

COON TAIL KNIT BOOT WITH SNOW EXCLUDER.

The processes employed in the manufacture of the woolen portion of these combination goods are particularly interesting. The grade of wool especially adapted to this class of goods is that known as carpet wool, of long coarse fiber. The bulk of it comes from the great wool centers of southern Russia, Bokhara, and the Oriental countries. The rough wool is very dirty and is first of all sorted for quality and colors, then subjected to a process of scouring to cleanse it. It is subsequently dried and dusted by fans and passed through a machine known as a "batch picker," in which weighed amounts of the various grades and colors are intimately blended or mixed. This operation corresponds to compounding in rubber work, and is done with a similar object in view—*i. e.*, to obtain a stock of definite cost and color suited to the goods to be made. From the batch picker the wool passes to the carding machines, where the fibers are combed out or laid in the same general direction. For the knit goods the next step is spinning the yarns, and for the felt goods the formation of a "bat" or wadding-like sheet built in plies on a special machine.

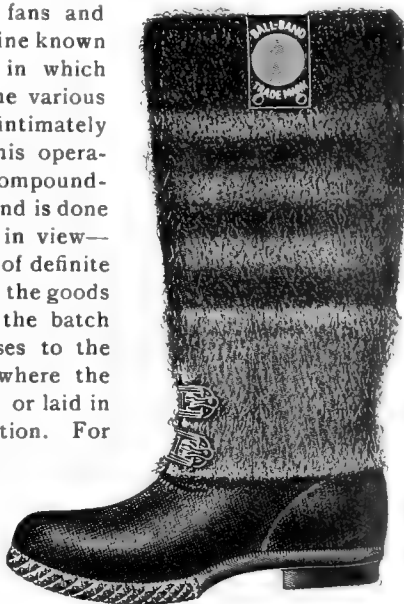


FIG. 2.

APPLICATION OF SNOW EXCLUDING DEVICE.

I. The Knit Boot.

Beginning with the yarn, the first process in making the knit boot is the knitting of a mammoth sock in two parts. The great size is necessary in the sock to obtain the weight of material necessary to permit the subsequent fulling and shrinking operations. The foot portion of the sock is knit on a small circular hand power machine, because its variable width and turning the heel is not as simple as the straight leg part. The latter is knit on a power machine run at high speed. Both foot and leg are knit with three yarns to give weight and bulk to the goods.

A peculiar knit boot called the "coon tail" (Fig. 1) is provided with a snow excluding device, and the leg is stripped somewhat after the style of a raccoon's tail. The snow excluder consists of a double ankle portion which lays down over the rubber shoe and effectually keeps the snow out of it (Fig. 2). In order to make the boot in this way the foot is simply knit



FIG. 3.

RELATIVE SIZE OF KNIT BOOTS BEFORE AND AFTER SHRINKAGE.

into the leg at a point several inches above the beginning of the straight tubular section which forms the leg, instead of at the beginning as in the ordinary form of boot. The cross coon-tail stripes are put into the leg by alternately shifting on and off the knitting needles, while the machine is in motion, the yarns of the body color and the darker yarns of the stripes.

The illustration (Fig. 3) gives an idea of the comparative sizes of the knit boot as first knit and as finished. After the knit boot comes from the knitting machine, its subsequent treatment is the same as that for a felt boot once formed in the rough. At this point the mode of making the start of the felt boot will be taken up and this will be followed by the consideration in detail of the finishing process in manufacture for both knit and felt.

II. The Felt Boot.

The carded wool passes direct to the machine in which it is formed into the "bat." The bat is a sheet of fluffy layers built up diagonally across until it is about two inches thick. It is then divided by hand into rough squares each sufficient for a single boot. One of the illustrations (Fig. 4) shows such a square of bat after the first operation upon it toward forming the boot. This first operation consists of felting it across the middle by a special machine. This machine consists of a hollow steam box with its upper surface corrugated and perforated. The bat is placed upon this and another finely corrugated iron plate of tongue shape is closed down upon it, and caused to vibrate back and forth at a high speed. This steaming, rubbing, and compressing quickly brings about the felting or interlocking of the wool fibers.

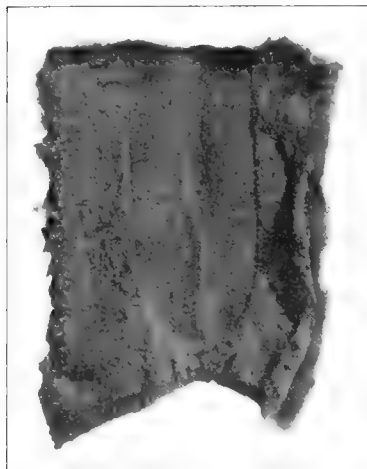


FIG. 4.
PARTLY FELTED BAT FOR WOOL BOOT.

another finely corrugated iron plate of tongue shape is closed down upon it, and caused to vibrate back and forth at a high speed. This steaming, rubbing, and compressing quickly brings about the felting or interlocking of the wool fibers.



FIG. 5.
FELT BOOT BEFORE AND AFTER SHRINKAGE
AND PREVIOUS TO SHAPING.

The next step is to close and felt the bat in the form of a seamless bag (Fig. 5.) This is similar to the first felting, except that it is done on a "horn" or machine composed essentially of a middle or tongue shaped hollow iron, corrugated and perforated for the escape of steam. Hinged at the back end of this part are top and bottom concave covers which close over the bat folded about the "horn."

By the action of the steam and rapid vibration of the upper cover plate the frayed edges of the bat are thoroughly felted into one body and the bat leaves the "horn" as a seamless loosely felted bag. The extra thickness of material where the bat is closed over forms a reinforcement for the sole and back of the leg, and receives leather stays and straps as guards against chafing or aids in removal of the boot by the wearer.

The knit and felt boots being thus formed in the rough, are subjected to the same process of shrinking, shaping, drying, and finishing. These processes begin with fulling. The goods are placed in the fulling mill, a wooden box in which they receive a thorough pounding in the hot fulling liquor by a huge mallet swinging like a pendulum. When this treatment has

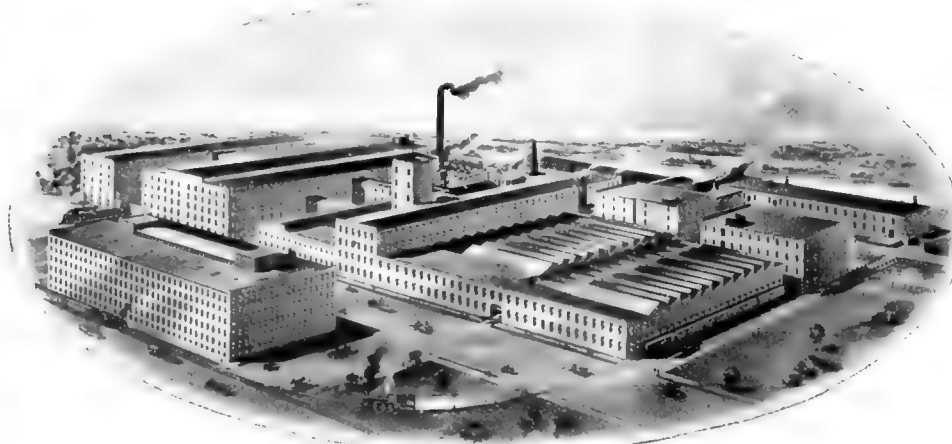


FIG. 6.
BOOT TREE COLLAPSED AND DISTENDED FOR FORMING SHRUNKEN
WOOL BAG INTO BOOT SHAPE.

removed the grease from the wool and reduced the huge baggy shapes to slim thick walled tubes (see Fig. 5), the goods are thoroughly washed to remove the fulling liquor. When dried they are ready to receive their final shape. To effect this the shrunken bag is placed for a moment over a vertical perforated form or pipe and steamed. Thus rendered hot and pliable it is slipped quickly over a collapsible boot tree (Fig. 6), which is then carefully expanded and the narrow bag under the guidance of the operator's hand expands to the size and shape of a boot. Thus formed the boots are dried on the iron trees hung in wheeled racks or cars. Once dried, the goods thereafter retain their shapes. The final finishing consists in sewing on the front, back and side stays of leather and the straps for drawing the boots on and off the feet.

The knit boot is more expensive than the felt, and much better, being considerably more flexible and by its knitted structure less liable to crack in service, a wear of six or seven winters not being unusual for these goods. The wear of felt boots is equally satisfactory, price being considered. Wool boots are made in a dozen or fifteen styles, including some for women.

The Mishawaka company also make the knit German sock (Fig. 7),



FACTORY OF THE MISHAWAKA WOOLEN MANUFACTURING CO.

for use as a lining to rubber boots or in combination with a rubber shoe of some form, as a light weight substitute for the knit or felt boot (Fig. 8). These goods are knit with



FIG. 7.
THE DOUBLE FOOT GERMAN
SOCK

FIG. 8.
GERMAN SOCK AS WORN WITH RUBBER OVERSHOE.

multiple yarns and sometimes with double feet—i. e., one foot inside another, both being knit to a heavy single ply leg, which is provided with a strap around the top to serve as a garter.

THE TEXTILE GOODS MARKET.

COTTON goods, so far as the rubber industry is concerned, have not had a free movement during the past four weeks. The restraining influence has been high prices incident to the excessively high cost of staple cotton, and although values have fluctuated over quite a range and continue to do so at this writing, sellers in the goods market have stood firmly to their prices, refusing to grant even the slightest concessions when cotton was rapidly declining. Cotton duck mills are curtailing their production in order to make their supply of staple carry them through the season, or until the new cotton crop materializes, while a few mills have stopped their machinery entirely. The majority of these mills bought cotton to cover their contracts last fall, and have refused, as a rule, to make further purchases. What the manufacturer is desirous of knowing is, where the minimum price of the staple is going to stand. If it is to be at 15 cents, then a scale of goods prices can be arranged on that basis and business can forge ahead, but with a market seesawing perpetually, neither the manufacturer nor the consumer is able to get his bearings.

It is safe to assert that the manufacturers of cotton duck have never experienced a season like the one through which they are now passing. They have orders on their books calling for one kind of duck at a wide range of prices. The far sighted rubber manufacturer who last fall placed his contract for enough duck to carry him through the year did so on the basis of 19½ cents a pound. There was not a large number, however, astute enough to take this course, others preferring to defer the matter in hope to see the price of cotton drop and

goods values follow in the downward course. The longer they waited the higher cotton went, and goods followed in the wake. Some of the belting people commenced to cover and paid from 20 to 23 cents a pound, while a few stood off, believing that the market would eventually go the other way, but that time has not yet come, and while some of the rubber manufacturers ordered duck during the past month at from 25 to 26 cents, there are others who have been buying in small lots at the latter figure, with the prospect of having to pay still higher prices later on.

The question naturally occurs, how is the rubber manufacturer who pays 25 cents a pound for duck going to compete with the manufacturer who pays but 19½ or even 23 cents a pound? To-day staple cotton is selling on the spot market at 3¾ cents less than it did just one month ago, and yet duck is firm at the same price it was quoted at that time, for the reason that the price for the latter was based on about 12 cent cotton. If the duck manufacturers were compelled to go into the market and buy cotton now they would advance the price of goods to a parity level which would place duck on a comparatively prohibitive basis. And if it be true as stated in the market that the duck mills are about out of cotton, the above described condition appears to be inevitable, and the mechanical rubber manufacturers who are buying duck in small quantities at a time, will be placed in a bad predicament. The Trenton rubber workers' strike has been a restraining factor in the goods market this month, but with this exception the demand has been of an average kind throughout the month. The consumers of light-weight sheetings have not been as active as the selling agents had predicted that they would be a month ago, and still a very fair turnover has been recorded. Prices that were made a month ago have been tenaciously adhered to, but no advances have been asked, prices remaining stationary.

Following are the prices of cotton middling upland spots at the leading ports:

	New York.	New Orleans.	Liverpool.
February 4	16.25 cents.	15½ cents.	8.8d.
February 11	14.80 cents.	13¾ cents.	7.18d.
February 18	13.75 cents.	13½ cents.	7.2½d.
February 25	14.30 cents.	13.58 cents.	7.66d.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

36"	Household Favorite	6¼ cents.
40"	Household Favorite	7 cents.
36"	Henrietta, L. L.	6 cents.
39"	Henrietta, H.	(net) 5¾ cents.
38½"	Henrietta, S.	(net) 5¼ cents.
40"	Henrietta, P. W.	7¼ cents.
36"	Florence C.	4¼ cents.
40"	Majestic C. C.	(net) 8½ cents.
40"	Majestic B. B. B.	8 cents.
40"	Majestic B. B.	7½ cents.
40"	Norwood	6½ cents.
36"	India, A. A. A.	7¼ cents.

<i>Sheetings.</i>		
40"	Highgate	6¾ c.
40"	Hightown	7 c.
40"	Hobart	7¼ c.
40"	Kingstons	8 c.
39"	Stonyhurst	6 c.
39"	Sorosis	5¾ c.
40"	Seefeld	8¾ c.
40"	Selkirk	8 c.
40"	Sellow	7¾ c.
48"	Mohawk	11 c.
40"	Marcus	6½ c.
40"	Mallory	6 c.
36"	Capstans	4½ c.
40"	Shamrock	10 c.

<i>Ducks.</i>		
40"	7 oz. Cran-	
40"	ford	10 c.
40"	8 oz. Chart-	
	res.	10½ c.
<i>Osnaburgs.</i>		
40"	10 oz. Carew	13 c.
40"	11 oz. Carita	14 c.

THE S. R. SMYTHE CO. (Pittsburgh, Pennsylvania), represented in New York by Dr. Oskar Nagel, No. 90 Wall street, have issued a catalogue of Suction Gas Producers for Gas Engines, showing the simplicity and advantages of the construction, and the economy in fuel attained thereby. These producers are built in units from 5 to 150 HP., and yield 1 HP. hour per pound of coal. No boiler or gas holder is required in connection with this outfit. [8"×10¼". 8 pages.]

AMERICAN IMPORTS OF RUBBER GOODS.

AS will be seen from the table in the center of this page, there has been of recent years a material increase in the values of imports into the United States of manufactures of India-rubber and Gutta-percha, as officially reported by the government authorities by calendar years. In connection with this showing THE INDIA RUBBER WORLD has obtained some interviews with the trade which are of interest, though the investigation as yet has not been extensive enough to explain fully the reason for the increase in imports. The rubber trade in this country is so diversified in the matter of lines of goods embraced, and the number of dealers and number of ports of entry, that a complete summary of the import trade could hardly be expected from interviews with the trade in a single city. The matter herewith, though not complete, doubtless will be found to contain information which will be found to be new to many of our readers.

HARD RUBBER.

A REPRESENTATIVE OF THE INDIA RUBBER WORLD inquired at the office of the American Hard Rubber Co. for an expression of opinion as to whether there had been any important increase in imports of hard rubber goods. "We can see no increase in the quantity of hard rubber goods bought abroad," he was told. "In fact, practically everything that is needed in this line is now made here, and the foreigner has a very small chance to undersell anybody. Some German combs are imported, but mostly of novel designs, and they are usually bought at a price which cannot make the transaction much of an object to the foreign manufacturer. Probably there were imported last year more than \$50,000 worth of hard rubber goods, all told."

A similar report was obtained at the office of the Vulcanized Rubber Co. Mr. Theodore E. Studley said: "I know of nothing in the way of hard rubber that is imported to any extent, except German rubber combs, and the total of these is not large. Now and then a foreign factory that is overstocked offers a lot at a price that is attractive to the American buyer. Some hard rubber syringe parts are also brought over and assembled here, but that trade is not important. I doubt whether the total imports of hard rubber goods last year were materially larger or smaller than in previous years." Mr. Studley named \$50,000 as probably covering the total value for the year—the same sum that, unknown to him, had been mentioned in the preceding interview.

Mr. Lehmann, of Messrs. Borgfeldt & Co., who is quoted more fully in another place, said: "We have imported more combs during the year, and some other goods in hard rubber, though the whole trade is not extensive. The competition in this line is great, and while we believe that in finish the German article is far superior, the high duty [35 per cent.] gives the home product the advantage. The foreigners, however, keep things moving by devising novelties and packing their goods in attractive shapes. These novelties compel trade, and it is usually some time before the American gets in with his copy, but it always

comes. By that time the German has got something new. The increase in these lines would not cut much of a figure in swelling importations, but would help a little."

There are no American statistics relating to hard rubber goods specifically, but the following figures compiled from the German imperial statistical office may be of interest. The German exports of hard rubber goods to the various countries are reported in metrical weights, with the value of the whole stated in one sum. Estimating the value of such exports to the United States at the average value of all exports in the same class, with the other details given in the official report, the following comparison may be made:

YEAR.	Weight (kilos). Total.	U. States.	Value Per Kilo.	Value Exports to U. States.
1900.....	897,700	58,200	9.5 marks.	\$117,739
1901.....	821,400	51,100	9 "	109,456
1902 ..	990,700	62,600	8 "	119,190
1903.....	1,190,600	93,700	8 "	178,409

These values, of course, are only approximate, but measured on the same basis year by year they show an increase, while the weight of German hard rubber goods exported to the United States has increased in four years from 128,040 pounds to 206,140 pounds.

TIRES.

THE importation of automobile tires is now controlled by two New York houses, agencies for the "Continental" and Michelin tires, respectively. These are both new concerns, and claim to be without details as to the importation of these tires in the past, before the business had become systematized. They express confidence, however, in the future demand in America for

these two well known European makes of tires. There is a certain demand for these tires from the owners of imported automobiles, for replacement when the original tires become exhausted. It may be mentioned that tires imported on vehicles are not entered as "rubber goods," but only tires imported separate. While no figures were given out at the above agencies, enough was said to suggest that enough foreign tires have arrived of late to augment appreciably the imports of rubber goods.

Whether this trade will increase, however, is another question. The manager of the New York branch of an important tire manufacturing company said: "A great many French automobiles have been imported within two years, and hitherto American tires have not been made to fit the rims of these vehicles. Now, however, several of our factories are making tires on metrical measurements, and I expect their product to supplant foreign made tires even on imported automobiles—not only as a matter of convenience, in many cases, but because automobilists are learning that our tires are as good as any others, and even better. Then the foreign tires cost more; they can't be made abroad cheaper than here, except in the item of labor, for the same materials are used, and there is an import duty of 35 per cent. When the owner of a foreign machine, in need of new tires, finds that he can get home made ones just as good, more conveniently, and cheaper, why should

VALUE of United States Imports of India-Rubber and Gutta-Percha Goods for Ten Years.

YEARS.	India-Rubber.	Gutta-Percha.	Total.
1894....	\$303,781	\$ 53,173	\$ 356,954
1895....	309,573	75,962	385,475
1896....	277,580	82,128	359,708
1897....	313,585	142,526	456,111
1898....	355,061	125,772	480,833
1899....	466,270	174,163	640,433
1900....	536,448	252,238	788,686
1901....	462,703	121,485	584,188
1902....	562,997	121,123	684,120
1903....	682,982	442,580	1,125,562

he buy imported ones? But all these conditions have not existed in the past, and I think it probable that the number of tires imported in 1903 was double that of the year before. But the value (including duty) would have been only \$200,000 if 2000 pairs of tires had been imported, and this would have been enough to refit every foreign machine in the country. But what will do most to prevent the growth of imports of rubber tires is the improvement of American automobiles, so that our people need no longer go abroad for high class machines."

SURGICAL GOODS.

GEORGE TIEMANN & CO., No. 107 Park row, New York, are not only extensive dealers in surgical instruments, but one of the oldest houses in the country, dating from 1826. At their office it was stated that as far as they were able to judge, few rubber goods in their line were imported. "We did not buy \$30 worth of imported rubber goods last year," was asserted, "because we have made in this country for our trade all the rubber goods we need. The appliances made in this country are as good as any made abroad, and cost us less. I should say that the importations of surgeons' rubber goods have been falling off every year."

Mr. Brand, manager of the rubber department of the Kny-Scheerer Co., wholesale dealers in surgeons' and physicians' materials, No. 225 Fourth avenue, was of the same opinion. "I am certain," said he, "that the importations of rubber goods for our lines is falling off every year. I believe it was 20 per cent. less last year than the year before, and 100 per cent. less than half a dozen years ago. Our rubber factories are wide awake and furnish everything we need. The imported goods are no better than the home made."

At the drugstore of William B. Riker & Son Co., No. 373 Sixth avenue, is a rubber goods department, the manager of which said: "If there has been any increase in the imports of rubber goods, it has not been in our line. I am positive that fewer surgical appliances and druggists' sundries were brought in last year than ever before. The reason for this is simply because we are making better products in this country all the time. I hardly know of an article now which can be bought abroad that is any better than can be made, and is made, at home. Take for instance such goods as soft rubber catheters, alimentary tubes, etc.; a few years ago they were largely bought abroad but now they are almost entirely made in this country. Ours are just as good and much cheaper. They may not have exactly as high a finish as those that are imported, but they are just as well made. In other goods in our line there is very little bought abroad. In fact, it is a rare thing to see a water bottle or a fountain syringe from the other side, and when you do they look antiquated and out of date. I should say that the importations of surgical goods last year were from 20 to 40 per cent. less than for the year previous. In fact they grow less every year. The American manufacturers are supplying the demand."

CLOTHING.

INQUIRIES in regard to waterproof clothing failed to elicit any details having a bearing upon the increased imports of rubber goods. At several department stores it was stated that there had been no increased demand for foreign mackintoshes or rubber coats. "I cannot say that we import any more stuff in value now than formerly," said the manager of the rubber department in one of the largest stores. "The situation has changed in this way: Formerly we imported many kinds of cravenettes and waterproof clothing. These things are all made in this country now and made as good as they are abroad. The cravenette business grew so rapidly, and so enormously, that the original

makers could not come near supplying the demand, so the Americans entered the field, and their goods are just as satisfactory as the imported. There is a great deal more cravenetted cloth made and sold here than is imported. The only lines there could possibly have been an increase of imports in is in the very high priced and fancy lines of silk waterproofs which are mainly used by automobilists. There has been a big increase in this line, of course, because two years ago there was nothing at all done in it. But even now I do not think that all told more than \$20,000 worth of such goods is imported. There are some very fair silk waterproof garments made now in this country, and it will not be long until we will cut into the foreign trade."

At the store of the Goodyear Rubber Co., Mr. James Kipp, the manager, declared that if there had been any great increase in the importations of rubber goods, it was not in rubber shoes and clothing. "The truth of the matter is," said he, "that the importation of rubber clothing is constantly growing less. This is because we are making better rubber clothing in this country every year. An English mackintosh is no better than an American mackintosh, and it costs more when imported. I do not see how there could have been much increase in the imports, for we do not meet the goods in the trade."

SOME RUBBER GOODS IMPORTS LOCATED.

ONE place where some ideas as to the increase of importations could be gathered was the large importing house of George Borgfeldt & Co., American agents of The Hanover Rubber Co., Limited. While reticent as to the details of the growth in importations, Mr. Julius Lehmann, manager of the rubber department, admitted that there had been a material increase. "We imported," said he, "more goods last year in almost every line than ever before, and in some lines many times the amount of the previous year. In this connection you might mention rubber sponges, which are comparatively a new article, but which are selling so rapidly that we cannot keep up with our orders. Two years ago there was nothing done in sponges; I don't think it is an over estimate to say that there were several hundred thousand dollars worth brought in last year. So you see that this is altogether gain and would do much toward explaining the increased importations. Another line in which the increase has been very marked is red rubber toys and rubber balls. The American manufacturers, while they imitate these things closely and with considerable success, have never yet been able to get the finish on the toys or the air retaining qualities in the balls. The Germans are past masters in the art of making toys. They originate all the novelties and they secure a softness of texture which makes them unbreakable. In the airtight balls the Germans have a secret process of treating the air which is forced inside, that of itself preserves the inner lining and prevents leaking. Then in design and decoration the balls are unapproachable by the American make. Doubtless twice as many toys and balls were imported last year as in the year previous. In other soft rubber goods there was also some increase. There is nothing like the German acid proof tubing for laboratory and surgical work, and the amount of these imports increased. Then in high class bulbs the Americans have never reached the Germans in softness and in lasting qualities. This double bulb affair for pyrography, for instance, is not made in this country at all, and there are large numbers of them sold."

Another line in which there has been an increase in imports is rubber sponges. A. H. Smith, No. 84 Chambers street, New York, stated to THE INDIA RUBBER WORLD that in July, 1901, he imported 36 dozen of the Russian make of sponges. By the end of the year he had imported and sold 862 dozen, since which time the demand has grown steadily. He reports hav-

ing sold as many as 12,000 dozen in a single six months, and at present each month shows an increase. The business in the last six months of 1903 was 50 per cent. larger than for the last six months of 1902. Rubber sponges are being made in the United States, and sold, but Mr. Smith does not consider them equal to the imported article. There is a single item of official statistics bearing upon this subject, by the way. The United States consulate at St. Petersburg reports the following values of exports of rubber sponges to the United States:

Quarter ended March 31, 1903.....\$15,181.41
Quarter ended June 30, 1903..... 19,403.53

Total, six months.....\$34,584.94

A FEW MORE DETAILS.

THE United States official report of the values of goods exported from various foreign ports to this country during the fiscal year 1902-03 is by no means complete, as regards any one class of goods, owing to the want of uniformity in classification, but the following details, compiled from it, may be of interest:

Rubber Goods.—London (including clothing), \$262,885; Hamburg, \$134,002; Hanover, \$45,246; Leipzig, \$10,614.

Toys and Dolls.—Brussels, \$50,850; Budapest, \$4736.

Rubber Tires.—Genoa, \$2770.

Elastic Webs.—Leicester, \$130,102; Manchester, \$40,119; Nottingham, \$2647; St. Etienne (ribbons), \$133.

Rubber Syringes.—Milan, \$117.

Waterproof Garments and Cloth.—Manchester, \$8232; Rotterdam, \$639.

India-Rubber Sheets and Ponchos.—Manchester, \$3442.

Oilcloth and Waterproof Cloth.—Liverpool, \$224,117.

Vulcanite and Celluloid Goods.—Edinburgh, \$2526.

Rubber Sponges.—St. Petersburg, \$34,585.

RUBBER GOODS IN COMMERCE.

GERMAN IMPORTS AND EXPORTS.

THE details in the accompanying table in relation to the German foreign trade in India-rubber goods has been compiled from a recent publication of the imperial statistical office. The figures given comprise the values (in German marks) for the past three calendar years. It should be noted that the figures given for 1901 and 1902 differ from those given for the same years in earlier publications from the same office, and reproduced last year in THE INDIA RUBBER WORLD. There is not space here for an analysis of the differences, which doubtless are due to some modification having been adopted in the classification of goods.

IMPORTS.			GERMANY.		EXPORTS.		
1901.	1902.	1903.	CLASSIFICATION.		1901.	1902.	1903.
2,644,000	2,345,000	2,644,000	...	Rubber threads and sheets...	2,871,000	3,474,000	4,405,000
414,000	434,000	445,000	...	Bicycle parts (tires, etc.)...	a	a	a
734,000	745,000	875,000	...	Textile goods covered with rubber...	11,962,000	11,630,000	13,287,000
234,000	216,000	206,000	...	Hard rubber goods...	7,393,000	7,995,000	9,608,000
4,243,000	4,035,000	3,756,000	...	Rubber boots and shoes...	1,318,000	1,728,000	2,039,000
196,000	280,000	196,000	...	Other fine goods of soft rubber...	1,047,000	1,028,000	979,000
107,000	105,000	86,000	...	Toys of rubber...	b	b	b
3,104,000	3,546,000	3,965,000	...	Waterproofed goods and apparel...	3,970,000	4,678,000	5,167,000
73,000	354,000	539,000	...	Tires, etc., including fabrics...	c	c	c
59,000	49,000	81,000	...	Elastic fabrics and hosiery...	339,000	329,000	363,000
236,000	183,000	293,000	...	Hemp hose, with rubber...	1,796,000	2,527,000	3,421,000
43,000	36,000	40,000	...	Hard rubber...	306,000	251,000	173,000
...	...	...	...	Unclassified rubber goods...	140,000	172,000	120,000
12,087,000	12,328,000	13,126,000	...	Total in Marks...	31,142,000	33,812,000	39,562,000
£591,124	£602,911	£641,896	...	Total, Sterling...	£1,523,583	£1,653,793	£1,934,812
\$2,876,706	\$2,934,064	\$3,123,988	...	Total, U. S. money...	\$7,411,796	\$8,047,256	\$9,415,786

a, c Included in exports of Bicycles and Parts [which amounted in value in 1903 to 18,715,000 marks; value of rubber parts not stated.]

b Included in exports of Toys, all sorts [which amounted in value in 1903 to 56,840,000 marks; value of rubber toys not stated.]

RUBBER BOOTS AND SHOES.

GERMAN imports and exports (in kilograms) for three years:			
FROM—	1901.	1902.	1903.
Russia.....	532,700	517,300	163,400
U. States.....	55,800	119,300	91,200
Austria.....	28,620	9,100	55,500
G. Britain....	28,200	14,500	29,700
Sweden.....	51,000	44,700	28,400
Not stated....	12,800	8,800	9,700
Total.....	707,100	733,700	682,900

TO—	1901.	1902.	1903.
G. Britain....	147,500	195,400	203,900
Austria.....	6,000	7,900	43,000
Turkey.....	2,100	12,600	40,300
Switzerland...	9,900	19,700	25,600
Roumania....	5,000	22,200	14,300
Not stated....	68,200	57,800	80,700
Total.....	239,600	345,600	407,800

GREAT BRITAIN AND IRELAND.

OFFICIAL statement of values of exports of manufactures of Caoutchouc, for three calendar years:

	1901.	1902.	1903.
Boots and shoes.....	£ 176,387	£ 171,674	£ 224,439
All other.....	1,086,028	1,042,884	1,204,984

Total value..... £1,262,415 £1,214,558 £1,429,423

Value of "Apparel and Slops," waterproofed by any process: In 1902, £202,244; in 1903: £282,444.

Exports of rubber footwear amounted to 138,084 dozen pairs in 1901; 144,014 dozen pairs in 1902; and 197,838 pairs in 1903.

No statement of imports of such goods is available as yet for 1903.

FRANCE—COMMERCE SPECIAL.

VALUES of rubber goods imports and exports for three years:

	1901.	1902.	1903.
Imports.....	francs 16,290,000	16,552,000	18,881,000
Exports.....	8,898,000	9,826,000	10,907,000

The movement for 1903, classified officially, was as follows: values being stated in francs:

	Imports.	Exports.
Unvulcanized sheets and vulcanized threads...	5,980,000	....
Elastic tissues.....	861,000	2,471,000
Overlaid tissues.....	101,000	185,000
Card tissues.....	338,000	3,000
Made up clothes.....	465,000	466,000
Shoes.....	3,406,000	652,000
Belting, hose, tires, etc.....	7,730,000	7,130,000

Total..... 18,881,000 10,907,000

U. S. gold..... \$3,604,033 \$2,105,051

The increase in imports was shared by all the classes listed, but the largest increase was in footwear. There was a decline in exports in several classes, but an increase of 2,115,000 francs in "Belting, hose, tires, etc," due probably to the growing trade in tires.

AUSTRIA-HUNGARY.

OFFICIAL returns of values of rubber goods in commerce, converting the crown at 20.3 American cents:

	1902.	1903.
Imports.....	\$2,262,902	\$2,801,339
Exports.....	1,875,033	2,294,687

The increase was general, in the lines both of imports and exports. More rubber footwear was imported and more ex-

ported. Exports of hard rubber goods increased from \$416,231 to \$564,340.

RUBBER BOOTS AND SHOES.

WEIGHTS of imports and exports for two years past:

FROM—	1902.	1903.
Russia....	kilos 174,400	169,800
United States..	10,800	29,600
Great Britain..	7,100	27,700
Germany.....	13,900	21,100
France.....	400	1,600
All other.....	11,700	6,600

Total..... 218,300 256,400

TO—	1902.	1903.
France....	kilos 93,000	116,300
Turkey.....	60,200	113,600
Roumania....	79,600	97,700
Germany.....	118,800	95,700
British India..	40,600	90,000
Other lands...	170,700	151,900

Total..... 571,900 645,200

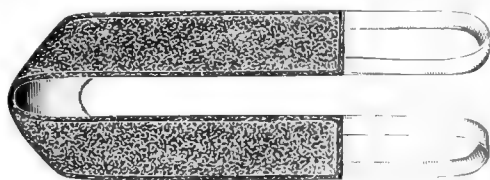
NEW GOODS AND SPECIALTIES IN RUBBER.

RUBBER SPONGE BATH MIT AND BATH BELT.

THE latest additions to the novelties made from rubber sponge material are a Bath Mit and a Bath Belt, which are represented in the two illustrations herewith. These goods involve in their construction an entirely new idea. In the case of each strong duck is used, with one side covered with a thick layer of rubber sponge, the shape of the article being sufficiently indicated in the engraving. Many applications of these articles for the toilet will readily suggest themselves, but it may be mentioned that they have been heartily commended by



BATH MIT.



RUBBER BATH BELT.

physicians for massage. These goods are protected by patents. [Hanover Rubber Co., Limited—George Borgfeldt & Co., American agents, New York.]

MILWAUKEE PATENT PUNCTURE PROOF TIRE.

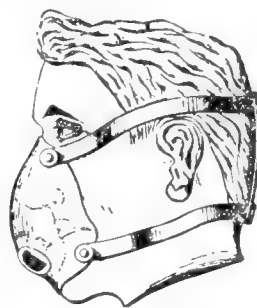
THE Continental Rubber Works (Erie, Pennsylvania) have acquired the business and goodwill of the Milwaukee Patent Puncture Proof Tire Co., including their patents and the exclusive right to manufacture the Milwaukee Patent Puncture Proof Tire. The Milwaukee company was incorporated in August, 1898, to exploit this tire, and from the beginning the tires sold by them have been manufactured by the

parties now in control of the Continental Rubber Works. The latter company believe that a growing demand exists for pneumatic tires that will give a better service than some that have been placed on the market, and that can be depended upon at all times. They believe that a good market exists in which the question of service outweighs the question of price. The Milwaukee puncture proof tire is a single tube tire, in the manufacture of which a new feature has been introduced with a view to lessening the tendency to puncture. The puncture proof material used is referred to as being applied to the fabric in the tread of the tire in such a way as not to detract from the resiliency of the tire—any possible stiffness thus contributed to the tread being offset by the elasticity of the side walls. In forming the tire, the tread is built up of five layers of fabric, between which are interposed three thin layers of carborundum, while the side walls are made only of the usual thick-

ness of fabric and the inner and outer walls of rubber. The weight of the tire does not exceed that of ordinary tires.

PROTECTION AGAINST DROWNING.

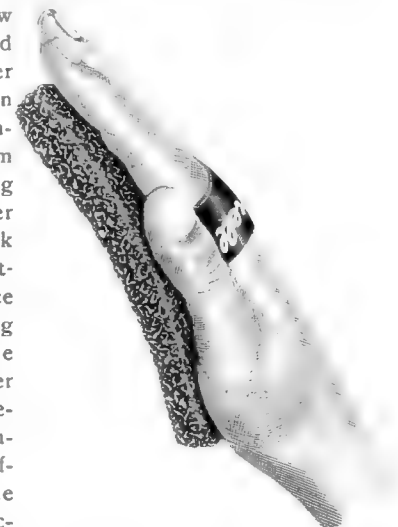
THE illustration herewith relates to a mask or appliance adapted to be applied to the face of the wearer, provided with openings, said openings having applied thereto internally short tubes provided with automatically closing valves, and the openings being covered with wire netting or gauze. The mask is also provided with elastic strips adapted for the automatic retention in place of the mask. This device is the subject of United States patent No. 747,793 (December 22, 1903), issued to Johann A. Steenken, and Albert Schutz, of Germany.



"KLEANWELL TINGLE SPONGE."

THIS is a new article in the shape of a rubber sponge for bath use, which was recently invented by a Russian workman, and for which a patent is now pending in the United States. It is simply a layer of the sponge, say half an inch thick, made of convenient size to cover the palm of the hand and bearing across it a heavy rubber strap to go over the back of the hand. The patentable portion of the device consist of the embedding through the center of the sponge of a layer of thicker or more substantial material which, while not entirely solid, is still of sufficient stability to keep the sponge in shape. The accompanying illustration shows the character of the appliance.

The sponge will be placed upon the market under the copyrighted name "Kleanwell Tingle Sponge." Each will be packed separately in a box. The owner of the American rights is A. H. Smith, No. 84 Chambers street, New York.



"NIAGRITE," FOR PROTECTING CABLES.

A NEW material for the protection of electric cables against damage by fire is an asbestos felt, sold under the name "Niagrite," which is made in strips 3 inches wide, 36 inches long, and 1/8 inch thick. When it is to be used the "Niagrite" is first dipped into a fireproof glue, and immediately placed upon the cable and wound spirally upon the same, the strips being continued one after the other until the entire cable is covered. After the whole has become well dried, a coating of the fireproof glue solution is applied over the surface, to seal the joints of the spiral winding and also to prevent the material from frosting, as sometimes happens when there is an excess of dampness. "Niagrite," by this construction and treatment, does not act as a non conductor, which might keep the heat generated by the wires in the cable and affect the internal insulation, but on the



contrary it acts as a conductor and carries away the heat. Where cables are suspended one above another and one burns out, there is danger that the others will be interfered with, but the use of this material prevents trouble with one cable from being communicated to the others. [H. W. Johns-Manville Co., No. 100 William street, New York.]

NEW WATERPROOF GARMENT.

THIS garment is designed to be of especial service to automobilists, cabmen, and others who are exposed to violent



weather. While it can be made of any waterproof cloth, it will generally be formed of the heavier materials. It is something between an overcoat and a gown, as will be seen from the accompanying illustrations. It will fit closely around the shoulders

and will have neatly fitting sleeves so that entire freedom of action of the arms may be had, but from the armpits down the garment will widen and be extremely loose, reaching to the ground. The only opening is in front above the waist line and this can be closely buttoned to the neck with a protecting flap. It is claimed that this design will furnish more complete protection to the entire body than any other yet devised and will be equally serviceable to the man on horseback as to the man on the cab seat.



The smaller of the illustrations, from the patent drawing, shows the construction of the upper part of the garment; the larger shows its appearance when worn. Patented by James Kipp—No. 743,174, November 3, 1903. [Goodyear Rubber Co., New York.]

"EXCELSIOR" TIRE PROTECTOR.

THIS is a patented device, for attachment to the wheels of automobiles and other vehicles equipped with pneumatic tires, in



the position indicated in the engraving. The patentees state: "Many owners of cars do not realize that tires are not, in 99 out of a possible 100 cases, punctured by nails or other sharp instruments as soon as the nail is picked up by the tires, but after the wheel has made several—possibly many—revolutions.

But they are beginning to realize this fact, and will see the

value of our device; also that when a tire or casing has been punctured and, possibly, a large hole has been blown out of the same, the tire or casing is never as good after having been vulcanized again, because of the heat required in the process, which must injure the fabric. These protectors are intended for rear wheels only, as it is very seldom that front tires are punctured, except by glass, and no device will prevent glass from puncturing." The protector is attached to the body of the vehicle, just ahead of the rear wheel, so as to allow the plate, which should rest lightly upon the tire, to hang almost perpendicular. When in this position the bracket, from which the plate is suspended by two links, will be far enough away from the tire to prevent coming in contact with the same; the bracket not being near enough to touch the tire. [The Howard Manufacturing Co., Attleboro, Massachusetts.]

"PAPIRUS" PACKING.

A NEW article for hot water packing and valves, and for use generally in places where rubber packing is liable to deteriorate rapidly, is being supplied under the name of "Papyrus." It is composed principally of paper pulp treated with chemicals, and then forced under great pressure into various shapes, as valves, discs, rings, packing, and so on. [Sayen & Schultz, No. 21 North Thirteenth street, Philadelphia.]

RUBBER AT THE SPORTSMAN'S SHOW.

AT the annual Sportsman's Show, at Madison Square Garden, New York, February 20-27, the rubber industry was not particularly in evidence. The bicycle interest was represented chiefly by the Pope Manufacturing Co. The Pope company offered some novelties in their 1904 bicycles that will tend to regain for the wheel some of its popularity that reached its height about eight years ago. The most radical improvement shown is a two speed gear chainless, fitted with coaster brake and cushion frames both fore and aft. None of these is entirely new except the two speed bevel gear. This arrangement made upon the same sliding principle as the changeable gear of the automobile provides the rider with a gear of any desired speed for level road riding with an ability to instantly change to a low gear for hill climbing, heavy going, or riding against the wind. The advantages of such a device can be appreciated by every bicycle rider for it settles at once the old debate whether it is better to ride a high gear and get speed or a low gear and secure ease.

The only separate tire exhibit in the show was that of the St. John non puncturable, offered by the St. John Rubber Tire Co., No. 116 Broad street, New York. This tire, made both for automobiles and bicycles, is a solid tire, or a combination of two solid tires joined by cushions. The road tread is made solid and is constructed in one piece, as is also the inside section which fits into the rim. Between these two rims are a series of soft cushions placed at equal distances apart and joining the two. It is claimed that this tire will not spread when going at a high speed, is puncture proof and will be found as resilient as a pneumatic tire.

In camping outfits the Pneumatic Mattress and Cushion Co. had an interesting exhibit. This concern, with offices at No. 2 South street, New York, has a factory at Reading, Mass. It manufactures pneumatic mattresses, cushions for boats and camp chairs, pillows, etc.

Abercrombie & Fitch, Nos. 314-316 Broadway, New York, dealers in sporting materials exhibited some rubber goods for camping outfits although it seemed to be the policy to use duck wherever possible. They offered, however, wading boots and pants, leggings, gun-cases, boat cushions and mattresses.

THE RUBBER TRADE IN CHICAGO.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: By common consent February was a quiet month in the local rubber goods market. January trade was exceedingly quiet, in all lines except rubber footwear, and February has not been much better. The only line showing an improved condition has been tires. The Chicago automobile show, and the approach of what promises to be the best automobile season the country has known, have kept the representatives of the tire manufacturers exceedingly busy.

There is now a feeling that general business conditions are improving, and that March will show good results, and there is a better undertone in the local rubber goods market than has been felt for months. Particularly is a good trade anticipated in the rubber footwear line. This has been a record winter for snow in Chicago. There has been snow continuously since Thanksgiving day, with the temperature below zero sixteen times thus far, the extreme cold preventing a thaw, and thus in a measure checking the demand for rubbers. But the thaw will come soon, and it is likely that the month of March will cause a revival of the demand for rubber footwear that will tax the jobbers to keep up with the needs of the retailer.

* * *

MR. T. F. BLANCHARD, who for many years has been general manager of the Chicago Rubber Works of the Mechanical Rubber Co., has resigned his position and retired from business. He has been connected with the factory since its establishment in 1882. His brother, D. C. Blanchard, who has been with the company since 1887, and for several years has been superintendent of the factory, succeeds to the position of general manager. Mr. Blanchard is optimistic regarding the future, in which he seems to be sustained by the present rate of receipt of orders. The factory is being run with a full force, and he states that there are now enough orders in hand to keep it running full time for some months. He is confident the demand is going to keep up; the trouble is to get the goods out fast enough. He says that many people held back from buying rubber goods on the theory that there would be a reduction in price as soon as the manipulation of the cotton market ceased, but they have now been convinced that a cotton shortage exists which will keep prices up until a new cotton crop comes in. Even then the price of cotton duck and sheetings will not be effected immediately so as to bring about a reduction in prices of mechanical rubber goods.

* * *

MORGAN & WRIGHT have decided to open a sales branch downtown, in the automobile district. Hitherto they have never had any selling depot in Chicago, not connected with their factory. When the bicycle business was at its height the firm were often importuned to take this step, but in spite of all inducements they continued to look after their city trade from the factory salesrooms. This new move will doubtless result in other tire manufacturers opening branch stores in the vicinity of the automobile mart. Most of these branch stores are in Lake street, in the heart of the downtown district, but with Morgan & Wright so much nearer "automobile row" they will feel they are at a disadvantage.

* * *

THE Chicago automobile show (on February 6-13) was a great success, measured by the amount of business done. While the total number of visitors was much less than at the New York show in January, the volume of sales ran ahead of that reported for New York. In this evidence of prosperity

the rubber tire companies are understood to have had a good share. The space allotted to exhibitors in the big Coliseum was more liberal than in Madison Square Garden and afforded the best possible opportunity for the display of machines and sundries. The demand seemed to be for the heavier classes of vehicles, such as the powerful touring cars and, as a consequence, when the tire men recorded a sale the amount was larger than the average sale of a year ago. There were no exhibits of rubber goods at the automobile show at Chicago which were not seen at the New York show. The various tire exhibits, and the men in charge, were:

THE DIAMOND RUBBER CO. (Akron, Ohio)—O. S. Tweedy, manager, and S. G. Frost and F. H. Hotchkiss of the Chicago office; W. H. Robey, Minneapolis.

FISK RUBBER CO. (Chicopee Falls, Mass.)—H. T. Dunn, general manager; B. H. Pratt, Chicago; D. T. Keenan, Buffalo; Edward Broadwell, Detroit; Richard Belt, Omaha; Frank Kerner, Minneapolis.

G & J TIRE CO. (Indianapolis, Ind.)—H. O. Smith, president; J. B. Anderson, general manager; H. A. Githens, sales manager; C. H. Semple, Chicago office; A. E. Vinton, Indianapolis.

THE B. F. GOODRICH CO. (Akron, Ohio)—W. H. Mason, Chicago office; O. R. Cook, C. B. Tellis, general representatives.

THE GOODYEAR TIRE AND RUBBER CO. (Akron, Ohio)—B. J. Henning, A. F. Osterloh, Fred Campbell, P. J. Konz, and F. A. Hastings, Chicago office.

THE HARTFORD RUBBER WORKS CO. (Hartford, Conn.)—J. W. Gilson, secretary; S. E. Gillard, Chicago office; W. H. Dowdy, Minneapolis.

INDIA RUBBER CO. (New Brunswick, N. J.)—Claude Platt, general representative.

MORGAN & WRIGHT (Chicago)—Arthur Phelps, sales manager; J. J. Alexander, Chicago; J. C. Weston, Detroit; L. J. Cooper, R. H. Campbell, J. D. Burton, C. S. Marshall, E. P. White, J. C. Clinton, Chicago.

Exhibits were made also by the Firestone Tire and Rubber Co. (Akron, Ohio); the Continental Caoutchouc Co. (New York); the Tennant Auto-Tire Co. (Springfield, Ohio); the Fawkes Rubber Co. (Denver and New York); and the B-OK Tire Co. (Chicago).

* * *

SALESMEN who have been in the South for various tire concerns report a great improvement in that section during the last year. The advance in the price of cotton, which has proved so inconvenient to the mechanical rubber industry through the increased cost of cotton duck and sheetings, has made the South more prosperous than it has been in years. As a result these traveling salesmen say there is an unprecedented demand for automobiles and tires for that section. One salesman said that when he went through the South a year ago on his initial trip he had hard work to interest any one in automobiles or tires. This year he said that there was scarcely a city that did not have representatives of from one to half a dozen automobile manufacturers. He said that an agent opened a store in Savannah, Georgia, the day before Thanksgiving for a well known automobile and in two days he had made three sales and ordered the machines. He says the prospects are bright for a good year all through the South.

* * *

A RECENT decision of the Illinois appellate court is of interest to the tire men as well as the automobile owners. A year ago the Chicago city council passed an ordinance requiring automobile owners to take out a license to operate an automobile and the city electrician issued this license, bearing a consecutive number. The automobilist was required to provide a tag bearing this number in figures 3 inches high, in white, upon a black background. This was done under the police power of the city as a means of identification in case of an accident. The court, when the matter was brought before it on appeal by A. C. Banker, declared that the city had no power to compel the

licensing of automobiles. The court said that "the speed of the automobile may be regulated and reasonable safety appliances, such as gongs and brakes, may be required, but to compel one who uses his automobile for his private business and pleasure only to submit to an examination and to take out a license (if the examining board see fit to grant it), is imposing a burden upon one class of citizens in the use of the streets not imposed upon others. We must, therefore, hold this ordinance, so far as it obliges appellee to take out a license before he can use his own automobile, in his own business or for his own pleasure, is beyond the power of the city council, and is therefore void."

This recalls a similar move that was made when cycling was the rage. The Chicago council passed an ordinance requiring that each bicycle be registered and licensed and provided with a tag and number, and providing for a fee of \$1. The ordinance was signed by the mayor and then Judge Lorin C. Collins attacked it in the courts. It never got beyond the circuit court, however.

* * *

THE Home Rubber Co. (Trenton, New Jersey) have made a change in their Chicago agency. Mr. H. L. Davis, who for two years has been manager of their branch at No. 17 La Salle street, has been transferred to the main office at Trenton, as general sales agent. The Globe Machinery and Supply Co. (Des Moines, Iowa) have taken over the La Salle street office, and the Home company have secured a location at No. 83 Lake street, from which Messrs. Howell and Brady will look after the Chicago trade.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: According to a local rubber man the makers of automobile tires are preparing for a rush of orders which is expected to come pouring in some time within the next few weeks. Local manufacturers have found this to be a backward spring as far as orders for automobile tires are concerned, owing to the fact that the selling agreement among the manufacturers prohibits the selling of tires with the former time allowance. But automobile makers are beginning to send out their 1904 automobiles, and the demand for tires is increasing. As long as the manufacturers refused to sell tires and allow their customers to pay for them any time inside of 60 or 90 days, as was frequently done, the auto makers bought tires for their machines before the demand for them commenced, but since the selling agreement was put into effect and they cannot secure such advantageous terms, the auto manufacturers are waiting until the demand for their machines begin. A well known automobile company recently announced that it had already disposed of 400 of its 1904 models, and was preparing to ship them at once. This of course means an order for 400 sets of tires, and doubtless other companies could report similar sales. Tire makers do not doubt that the tire trade this season will exceed that of last, when it was the largest in the history of the trade.

* *

THE B. F. Goodrich and Diamond Rubber companies are among the parties most interested in the present agitation regarding the preservation of the Ohio canals which is being fought in the state legislature. The factories of these companies are built on the banks of the Ohio canal, and if the canals of the state should be done away with, as is being urged at present, both companies would suffer. All of the water used in the big plants of these companies is secured from the Ohio canal,

and they will make a spirited fight to have the Ohio canal, at least, retained. Should this canal be done away with by the legislature, it would mean an increase of thousands of dollars annually in the water rent of the companies, which they wish to avoid. There are a number of other factories along the banks of the canal which would also suffer by such action, and the companies have banded together to fight the project. Colonel George T. Perkins, president of the Goodrich company, has been made chairman of the association, and has power to call meetings and make arrangements for conducting the fight. It is said that the local association will spend a great deal of money in helping carry on the work of the Ohio Canal Association in the interest of the canals.

* * *

COLONEL GEORGE T. PERKINS, president of The B. F. Goodrich Co., will, it is said, retire from the presidency of the Second National bank in March, although he will be retained on the board of directors. Mr. Perkins has been connected with this institution for a number of years, and has always been considered one of the ablest financial men in the city. In March the Second National and the Citizen's National banks will be consolidated, forming one of the largest banking institutions in this part of Ohio. The added duties which this will entail are considered too arduous by Colonel Perkins, it is said, and for this reason he will not accept the presidency of the new institution.

* * *

MENTION has been made in these pages of the rubber bowling ball which is being made at the local plant of the American Hard Rubber Co. Previous to this time the ball has been more of an experiment than anything else, but it has now taken its place among the standard products of the company. During the week of February 8-13 the national tournament of bowlers was held in Cleveland, Ohio, and at the same time the annual meeting of the American Bowling Congress, their national organization, was held in the same city. This organization had the power to make or mar the future of the rubber ball business, and a great many bowlers believed that it would place a ban upon the rubber ball, thus destroying a profitable business for hard rubber companies. One thing which caused the bowlers of the West to believe that the hard rubber ball would be knocked out was the fight which was being waged against it by the Brunswick-Balke-Collander Co., manufacturers of bowling alleys and equipment. They, of course, were opposed to the hard rubber ball, as the general use of the ball would deprive them of a considerable income, and it is said that they made a hard fight against its use. They were able to do this by reason of the fact that several of their employees were members of the executive committee, and they were aided by the fight of the Eastern bowlers for an all-wood ball. [See an article on this subject following this letter.—THE EDITOR.] But when the matter came up in the meeting of the executive committee the hard rubber ball was not legislated against, and the American Hard Rubber Co. are now preparing to place them on the market. The cost of the ball may prevent it from becoming general in use, although when once bought it will last a lifetime. But the fact that a *lignum vitae* ball costs about one fifth as much as the hard rubber ball will prevent it from becoming as common as the wood ball. The crack bowlers, to whom expense is not an object, will, of course, use the ball, and a big trade is predicted. One of the features of the tournament was the exhibit of hard rubber balls in the big armory where the tourney was held. This exhibit was in charge of Joseph Dangel, superintendent of the American Hard Rubber Co. plant, and it attracted much attention. A team of bowl-

ers from the rubber factory, captained by Mr. Dangel, rolled in the tournament, each man using a hard rubber ball. The members of the team are Joseph Dangel, T. M. Guenther, Louis Ball, Harry King, and Edward Bullock. While the team did not win any prizes, it advertised the hard rubber ball well, and accomplished its purpose.

* * *

CAPITALISTS of Alliance, Ohio, are trying to secure the plant of the Woodruff Automobile Co., of Akron, and it is claimed that they will be successful. They have made good offers to the company, and it is stated that they will be accepted.

Aaron Stauffer, an employé of the Diamond Rubber Co., has instituted suit against that company for \$6000 damages, alleging that through the explosion of gases in the reclaiming plant of the company on February 24, 1903, he was badly burned, suffered the loss of two fingers, and had his eyebrows and lashes and mustache burned off. He alleges that on account of the fact that the room in which he was working was improperly lighted it became necessary for him to strike a match, thus causing the explosion.

Rumors which have found place in the newspapers of College Point, New York, where additions are being made to the plant of the American Hard Rubber Co., to the effect that the company's plant at Akron is to be closed, naturally caused some concern here. All knowledge of such intended change, however, is denied at the Akron branch of the company.

At the annual meeting of the Northern Ohio Traction and Light Co., Mr. Will Christy, president of the Firestone Tire and Rubber Co., was elected first vice president. Mr. Christy has served in this capacity for a number of years, and is one of the best known traction men in the middle West.

THE RUBBER BOWLING BALL.

THE use of the hard rubber ball for bowling is something new but it opens up a new use for the material, and may result in the exclusive use of this ball and the relegation of the wooden ball to the realm of the "has beens." At present the hard rubber balls are not numerous but they are growing in number, and they have been recognized by the national bowling congress. In speaking of the Cleveland meeting and the discussion of the rubber ball, Mr. A. F. Troesch, the treasurer of the Brunswick-Balke-Callender Co. (New York) said: "We did not oppose the recognition of the rubber ball. In fact it was none of our business, and if it had been we would have had no voice in the matter, for the national congress of bowlers was specially anxious that no tradesmen should take any part in its affairs. We have no objection to the rubber ball; in fact they are made for us by the American Hard Rubber Co., and we sell them whenever we can. We have been endeavoring for ten years to find some ball which will take the place of the *lignum vitae*—for the wood is getting scarce—and we rather incline to the idea that hard rubber has solved the problem.

"The hard rubber ball does not wear out anything like as soon as the wooden one; the finger holes do not crack, and if they did hard rubber balls could be repaired. The main objection to the rubber ball is its high cost. The only opposition to the use of rubber that I have heard of comes from the New York Bowling League. This organization has adopted rules of its own, regardless of the national congress. These rules, which govern matches, require the use of balls made entirely of wood and weighing not more than 16 pounds. I think that in future rubber balls will be more generally used."

The above article should be read in connection with the preceding correspondence from Akron.

THE RUBBER STRIKE AT TRENTON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Local No. 4, Amalgamated Rubber Workers' Union of America, on January 25, inaugurated a general strike in the rubber factories in Trenton on January 25, affecting nine establishments, and which is still in progress.

As early as April last a request was made to each of the nine rubber manufacturing concerns in the city that a committee of the Rubber Workers' Union be met, to talk over the matter of the manufacturers using the union label on all their products. As a result of this request, an informal meeting of the manufacturers was held, at which all the local factories were represented. The entire subject was gone over carefully, when it was decided that, while the using of the label might in itself appear a small matter, it would involve distinctly a recognition of the union, and the demand was refused.

The strike in January was preceded by a demand for a uniform increase in wages, which was refused by the companies, acting separately. The position was taken that the manufacturers would treat with their employés as individually, and not through the medium of their labor union. Upon the declaring of the strike, the factory owners organized "The Rubber Manufacturers' Association of the City of Trenton," for the promotion of their mutual interests, with these officers: Watson H. Linburg, president; W. L. Blodgett, secretary; W. J. B. Stokes, treasurer. From an official of this organization your correspondent is advised as follows, as to the manufacturers' position.

"On the Monday before the strike was ordered each rubber manufacturing company received a written notice from the union demanding (1) the recognition of the union, (2) the adoption of the union label, and (3) the adoption of the scale of wages submitted with the demand. With the notice was a statement that if the demand was not granted, drastic methods would be taken to enforce it. Inasmuch as the scale asked for was all out of conformity with the wages being paid, the advance was denied. The manufacturers claimed that their men were being paid according to their skill and ability, and that many were receiving higher wages than they would receive under the scale asked for. Aside from these cases the new scale was, on an average, an increase of 10 per cent.

"The refusal of the manufacturers to grant the increase was followed by the strike. The men refused to work and picketed from 25 to 100 strikers at each mill to keep out non union workmen. Steps were at once taken to fill the strikers' places and all but two of the companies were able to run their mills with reduced forces. On an average about 25 per cent. of the usual force was at work. At two mills no attempt was made to run, the companies preferring to give their men a week's time to consider the matter. These mills resumed shorthanded the second week, with the help of green hands, secured some here, and others imported. The appearance of the non union workmen on the streets at quitting time led to trouble in two or three instances. The most serious trouble took place at the plant of the Grieb Rubber Co., where squads of police were ordered out as guards as the men left for their homes. Several companies met this situation by arranging eating and sleeping accommodations in their mills and housing the new men there."

At this writing this official states that the mills are being operated smoothly. The forces of workmen are not quite up to the normal, but he says the mills are all doing well and the strike is practically broken. A number of defections in the

ranks of the union men, it is claimed, have aided the manufacturers materially in keeping running.

James O'Donovan, a member of the local union and an international organizer, who is conducting the strike for the union, gives this account of the strike, from the standpoint of the union:

"The wages paid in the Trenton mills are less than those paid elsewhere. On December 4, 1903, the union made its first demand on the manufacturers. This included the recognition of the union and the adoption of the new wage scale, averaging about 8 per cent. increase; the adoption of the label was left optional. To this the union asked an answer on or before January 4. The manufacturers answered by posting notices in the mills to the effect that the 1903 wage scale would prevail during 1904. Then the union appointed a committee to visit the manufacturers to secure their ultimatum. The final word of the manufacturers was that the demand would not be granted. In order that all possible means might be tried to settle the matter amicably the union asked for a collective conference with the manufacturers on the question, which was ignored. Then nothing was left to the union but to strike. The night we voted to strike 471 members were present, out of a total membership of 621. Over 800 men went out when the strike was inaugurated and we have lost only seven men."

As soon as the strike was declared, headquarters were opened by the union, and have since been maintained. On the night of January 25, Samuel Gompers, president of the American Federation of Labor, came to Trenton and addressed the rubber workers. T. J. Edwards, of Boston, president of the Amalgamated Rubber Workers' Union has been here twice. Arrangements have been made by the union by which the married men among the strikers are paid \$7 per week and the single men \$4 per week. Many of the local unions in other trades have voted financial aid, and several benefit performances have been held.

It is now five weeks since the strike was declared. The manufacturers claim to have got into better shape with every week, and that there have been a number of defections from the strikers' ranks. The labor union claim, on the other hand, not to have lost strength, and that, with the support of sympathetic labor unions in other industries, they will be able to pay strike benefits indefinitely. It is known, however, that some of the strikers have left Trenton, to find work elsewhere. Some of the Trenton factories have been placed on the "unfair list," which means that a boycott has been ordered against their products.

All the rubber manufacturing companies hold membership in the recently formed Manufacturers' and Employers' Association, which includes representatives of practically every manufacturing industry in Trenton, besides many merchants who are large employers of labor. Richard C. Oliphant is president, Alfred Lawshe, vice president, and Lewis Lawton, treasurer. The affairs of the association will largely be directed by the executive committee, composed of the officers named and Charles H. Oakley, of the Grieb Rubber Co., Clifton Reeves, and Alfred K. Leuckel. Then there is an executive board composed of one representative from each industry included in the membership. The objects of the association are mutual protection in labor difficulties, and to act as a sort of general clearing house for hiring labor and other like matters.

THE balloting by bondholders of the Tehuantepec Rubber Culture Co., for an inspector from among their number to visit the plantation this year, resulted in the choice of Mr. Grosvenor Calkins, whose report will appear soon.

THE GREAT BALTIMORE FIRE.

THE city of Baltimore was visited on February 8-9 by one of the most disastrous fires that ever attacked an American city. In point of loss and destruction it was second only to the great Chicago conflagration of 1871. Beginning at 11 o'clock Sunday morning the flames raged for thirty-six hours, burning out thirty blocks and destroying nearly 1500 buildings. The total loss is estimated at something like \$70,000,000, with a loss falling on the insurance companies to the extent of \$50,000,000. Washington, Philadelphia and several small Pennsylvania cities sent engines to assist the Baltimore fire department on the first day of the fire but as more help was needed New York was appealed to and two special trains dispatched carrying ten engines and a hundred men. It was largely due to the excellent work of the New Yorkers that the fire was not more destructive.

The United States Rubber Co., at No. 102 Hopkins place, were in the line of progress of the flames, and at one time it seemed that the building would be completely destroyed. The direction of the progress of the fire was suddenly changed, however, and, while the building was seriously damaged on the outside, no harm was done to the contents. A new location, which may be regarded as permanent, has been secured immediately across the street, at No. 101 Hopkins place, where new offices have been fitted up and the stock of goods put in position.

The Baltimore branch of The Manhattan Rubber Manufacturing Co. (New York); at No. 23 South Charles street, was completely burned out, only their books and papers being saved. The loss amounted to about \$30,000, which is fully covered by insurance. A new location has been secured, at No. 200 South Charles street.

The Linthicum Rubber Co., wholesalers of rubber footwear, lost their immense warehouse at No. 25 Hanover street, with a stock of about \$225,000 worth of "Banigan" and "Woonasquatucket" boots and shoes. The company expect to have their warehouse rebuilt within six months, but in order to be able to serve their trade meanwhile, a warehouse has been leased at York, Pennsylvania, and another at No. 309 North Howard street, Baltimore, where the company's office will be located for the present. By March 1 the company expect to have a full new stock of goods, manufactured expressly for them. Their salesmen started out with full samples while the fire was still in progress.

George P. Thomas, Jr., at Baltimore and Charles streets, was burned out. He has secured a new location at No. 115 Sutton street for his wholesale business, at No. 220 North Howard street for retail trade, and at Hopkins place and Lombard street for offices. He writes: "This is a little mixed up, but it is the best we could do under the circumstances." Mr. Thomas handles rubber footwear and clothing and mechanical goods. On account of using the sign "Goodyear's Rubber House," it was generally reported that the Goodyear Rubber Co. had been burned out. The Goodyear Rubber Co., however, had no house in Baltimore, though Mr. Thomas handles some lines of their goods, as also do the Baltimore Rubber Co. and the Linthicum Rubber Co.

The Baltimore Rubber Co., No. 41 South Liberty street, were among the concerns burned out. A new location has been secured at No. 414 West Baltimore street, where business has been resumed. This house is the Baltimore branch of the New York Belting & Packing Co., Limited, and the Stoughton Rubber Co., and agents for the Fabric Fire Hose Co. and H. M. Sawyer & Sons—an oiled clothing firm. The Baltimore Rubber Co. have discontinued their rubber footwear department.

NEWS OF THE AMERICAN RUBBER TRADE.

PARAMOUNT RUBBER CO. CHANGES OWNERS.

THE Paramount Rubber Co. (Newark, New Jersey) has by unanimous vote of the stockholders gone into liquidation, and will cease to exist as a corporation. At a meeting of the directors held on January 22, this action was determined upon, and a meeting of stockholders called for March 4 to ratify the dissolution. As the directors and stockholders are identical, there will be no opposition. This factory has been exclusively employed making erasers, rubber bands, and other such goods for A. W. Faber, lead pencil manufacturers, and the members of that firm have from the beginning been interested in the plant. They have recently acquired all the stock, and this is the occasion for the dissolution of the corporation. William F. G. Geisse, manager of the Faber firm, stated to a representative of THE INDIA RUBBER WORLD that the business of the factory would be continued exactly as heretofore, with the exception that instead of being a corporation, it would be a portion of the firm of A. W. Faber (New York). "The same number of people will be employed, the same people, the same amount of goods will be made," said he. "We make at this factory all the rubber goods we use, whether in the domestic trade or for export."—The Paramount Rubber Co. was incorporated in New Jersey in 1898, and acquired the factory of L. Joy & Co. (Newark), where, for nearly 40 years, carriage cloth and rubber clothing were made. The Paramount company was organized with \$100,000 capital, with John M. Underwood, president; Otto Arendt, vice president and secretary; Frank Holt, treasurer; and James S. Brant, superintendent.

U. S. RUBBER RECLAIMING WORKS.

MR. FRANK W. BREWSTER will, on March 1, sever his connection with the Birmingham Iron Foundry (Derby, Connecticut) of which he has been mechanical engineer for a number of years, and on that date assume the position of general superintendent of the various plants of the U. S. Rubber Reclaiming Works, of New York, making his headquarters at Buffalo, New York. Mr. Brewster has been identified with the Birmingham Iron Foundry, as well as with rubber manufacturing for nearly 20 years. He is favorably known by practically all the rubber manufacturers in America, as well as abroad as one of the foremost mechanical engineers as pertaining to rubber machinery and rubber manufacturing in general, and he will be a great acquisition to the company. The business of the company has increased so rapidly that it is already taxing to the utmost the facilities of the new large mill at Buffalo, and it is understood to be the intention of the company as soon as weather conditions permit, to build large additions thereto, which will materially increase its output. We wish Mr. Brewster every success in his new departure.

FAILURE OF GEORGE W. BERRIAN.

GEORGE W. BERRIAN, dealer in rubber goods at No. 26 Cortlandt street, New York, filed a petition in bankruptcy on February 10, his liabilities being named as \$14,631 with nominal assets of \$3120. Mr. Berrian began in the rubber business May 1, 1895, as a partner in Camp & Berrian, at the corner of Nassau street and Maiden Lane, buying out his partner January 1, 1898. He gave up the store May 1, 1903, removing to the Cortlandt street address. Mr. Berrian was president of the K. B. M. Novelty Co., manufacturers of rubber goods at Newark, New Jersey, for which concern a receiver was appointed about

two months ago. Mr. Berrian owned 300 shares of stock in the concern and had a claim against it for \$2600 for money advanced. Frantis H. Griffin, No. 41 Wall street, was appointed receiver to wind up Mr. Berrian's affairs. When seen by a representative of THE INDIA RUBBER WORLD, Mr. Griffin said that Mr. Berrian would engage in some other business hereafter. The former stand of Mr. Berrian was in the premises originally occupied by Daniel Hodgman, founder of the Hodgman Rubber Co.

INTERNATIONAL RUBBER MANUFACTURING CO.

NOTICE has been given to the creditors of this corporation, in bankruptcy, that the first meeting of its creditors will be held on March 14, at 2 P. M., at the office of Edwin A. S. Lewis, referee in bankruptcy, at No. 1 Newark street, Hoboken, New Jersey, when said creditors may attend, prove their claims, appoint a trustee, and transact such other business as may properly come before said meeting. The official notice states the amount of assets at \$152,079.78 and the liabilities at \$163,697.12.

EUREKA FIRE HOSE CO.'S DENVER BRANCH.

THE Eureka Fire Hose Co. (New York) have made arrangements with Mr. Julius Pearse, of Denver, to represent them exclusively in the sale of their rubber lined cotton fire hose, in the states of Colorado and Wyoming. Mr. Pearse has had large experience in fire department matters, having been chief of the Denver fire department for seventeen years. In making this connection the Eureka Fire Hose Co. adhere to their policy of having their selling department represented by men who are the best and most widely known in their respective territories, in the company's line of business. The office of Mr. Pearse is Room 9, Jacobson building, Denver, Colorado.

GEORGE WATKINSON & CO. (PHILADELPHIA.)

THE plans for the change of control of this business, referred to in the last INDIA RUBBER WORLD as having been acquired by interests allied to the United States Rubber Co., have not yet been fully consummated, but progress is being made. The entire stock of rubber boots and shoes, tennis goods, and wool boots, has been purchased by A. F. Cox & Son, Portland, Maine.

DELAWARE RUBBER CO. SOLD OUT.

ON February 17 there was a public sale of the effects of this company, a jobbing concern in the bicycle, tire, and rubber trade, at No. 631 Market street, Philadelphia, ordered by the receiver, Franklin Kessler. THE INDIA RUBBER WORLD'S Philadelphia correspondent reports that Mr. Kessler is not registered in the City Directory, and that he was unable to locate him. The sale took place as advertised, however, and comprised a number of water fans, bicycles and parts, and rubber hose and mats. The major portion of the stock was purchased by the Manhattan Storage Co. of New York, for \$18,000. The latter concern, engaged in wholesaling and retailing bicycles, automobiles, and tires, will continue under their own firm name, the business of the Delaware Rubber Co. The Delaware company was composed of Jacob, Jesse, and Morris Froehlich, and had been in business for several years. Recently they made an offer to compromise with their creditors, which was not accepted. Their liabilities were reported at about \$55,000.

Allied with the Delaware company was the Froehlich Rubber Refining Co., incorporated June 9, 1903, with \$9000 capital. Morris Froehlich was president. A plant was operated at No. 3444 Trenton avenue, Philadelphia, making a rubber compound

and working it up into molded goods. An assignment was made on January 22 last to the Equitable Trust Co., by whose order the machinery and stock were sold on February 18. The sale included material in various stages of manufacture, horse-shoe pads, rubber quoits, etc., stamping and cutting machines, lathes, dies, and electrical plant. There were nearly a hundred buyers, and the sale netted about \$12,000.

CANADIAN WATERPROOF CLOTHING TRADE.

AN exceptionally rainy season in England has had the effect of taxing the capacity of the waterproof clothing factories in the Old Land with the result that export orders were not shipped with the promptness which usually distinguishes British business methods. So large were the orders that permission was sought to work overtime and during otherwise prohibited hours. Canadian factories have profited accordingly, and they all report prospects very bright.—*The Clothier and Haberdasher (Toronto)*.

REVERE RUBBER CO. EMPLOYEES' "SECOND ANNUAL."

A YEAR ago, in reporting a banquet given by the employees of the Revere Rubber Co. (Boston) in commemoration of the removal of the company to new offices, THE INDIA RUBBER WORLD mentioned that on account of the success of the affair it doubtless would become a regular institution. On the evening of January 29 the clerks and salesmen of the company had their "Second Annual," which proved equally enjoyable to those who participated. It was attended by forty persons, in the banquet hall of the Quincy House. No formal organization exists for the purpose of these dinners, there being no officers except a dinner committee. That responsible for arranging the recent dinner consisted of Charles A. Case, C. H. S. Wetmore, Edwin L. Stickney, Walter E. Belcher, James F. Sanborn, and William D. Jenkins. An elaborate menu was designed and provided by Mr. Case, and inside was tucked a leaflet containing a burlesque "Bill of Air," the very witty production of Mr. G. Arthur Gray. There were three formal toasts, responded to as follows: "The Home Office," by S. O. Barnard; "The Factory Office," by W. F. Jones and "The Boston Store," by G. C. Shirts. Mr. Gray was toast master. The rest of the speaking was informal. Music was provided by Astrella Brothers' orchestra and Mr. H. I. Belcher, vocalist, besides which there were performances by a prestidigitator and recitations by Mr. Joe Roth, in German dialect. The cover of the menu was embellished with a group of photographs of officials of the company, so good that we have pleasure in reproducing them in the accompanying plate.

The burlesque "bill of air (hot air)" embraced many items not generally served at "second" or any other "annual" dinners—"club footed parsnips," "hot and chilly sauce," "warm beans, cold beans, has beans," "beef hash—brush and comb served with every order," "roasted umpire, or fried with the batters," "cold shoulder, but not for our guests," "boneless ice cream," and the like. "Game—Canvas Back Duck, Burlap Back Duck, Other Ducks (30 and 32 ounce), Whist, Chess Pit." There were also hints for the diners, such as: "If oysters are ordered, guests will please do it quietly, as a noisy noise annoys an oyster." It is stated that "Board can be had by the weak as well as by the strong," and "our butter is union made; that is, where there is union there is strength."

RUBBER GOODS MANUFACTURING CO.

THE directors, at a meeting in New York on February 8, declared the twentieth regular quarterly dividend of $1\frac{3}{4}$ per cent. on the preferred shares, out of earnings, payable March 15 to holders of record on March 5. Coupons will be mailed to registered addresses. The disbursement will be \$140,882.

"EUREKA" FIRE HOSE AT THE BALTIMORE FIRE.

THAT some of the glory that has come to Chief Howe and the nine fire engine companies who were sent by the mayor of New York to assist Baltimore in the recent great fire was due to the quality of the hose used by them, will not be questioned. When Chief Howe and his valiant fire fighters started for Baltimore they took with them about 10,000 feet of $2\frac{1}{2}$ inch "Eureka" fire hose, which had just been delivered by the Eureka Fire Hose Co. to the city of New York under a contract which called for 20,000 feet $2\frac{1}{2}$ inch hose, 1500 feet 3 inch, 4500 feet $1\frac{1}{2}$ inch, and 250 feet 4 inch hose. Subsequently, on February 8, about 4 P. M., the Eureka Fire Hose Co. received a telegraphic communication through Mr. W. W. Atterbury, general manager of the Pennsylvania Railroad Co., at Philadelphia, from the Hon. Robert W. McLane, mayor of Baltimore, to ship as quickly as possible 20,000 feet $2\frac{1}{2}$ inch fire hose, with Baltimore standard couplings attached, complete. The Penn-



J. S. PATERSON,
Assistant Superintendent.

E. S. WILLIAMS,
General Manager

F. W. VEAZIE,
Superintendent.

HENRY C. MORSE, Treasurer.

J. H. LEARNED,
New England Sales Agent.

W. H. GLEASON,
Secretary.

REVERE RUBBER CO. OFFICIALS.

sylvania road offered every facility, shipping the hose on regular passenger trains without expense, and doing everything possible to expedite delivery. Notwithstanding that couplings had to be threaded especially, the Eureka company shipped 4000 feet on the night of February 8, keeping their factory open until midnight. On the morning of the 9th they shipped 3500 feet, with 5500 feet on February 11, and 7000 feet on February 13, practically completing the entire order within three days, and threading 400 sets of couplings specially to conform to Baltimore fire department requirements.

THE RELIABLE RUBBER CO.—A CORRECTION.

IN reporting the incorporation of this new rubber manufacturing concern, at Akron, Ohio, in the last INDIA RUBBER WORLD (page 175), the name was inadvertently printed "The Reliance Rubber Co." The latter name belongs to a new concern at Trenton, New Jersey.

"NO GREAT LOSS WITHOUT SOME SMALL GAIN."

EVEN the appalling fire which recently swept a large part of Baltimore out of existence will benefit some. The salvage companies, who salvage goods damaged by fire and sell them for the benefit of the fire insurance companies, will profit by this loss. The goods damaged must be carefully dried before they become salable, much depending upon the success of this drying. The Underwriters Salvage Co. of New York recently placed an order with the B. F. Sturtevant Co (Boston), for the complete equipment of a kiln for drying such goods by the Sturtevant fan system. The kiln is divided into small rooms of various widths served by overhead tracks from which are suspended frames for supporting two tiers of baskets for the reception of the water soaked material. These rooms are of fireproof construction and the size is governed by the material to be dried. Hot air is diffused through the rooms while the amount of air and its temperature is easily controlled. The drying is positive, economical and always independent of the weather. The kiln is not only equipped with the Sturtevant apparatus for drying, consisting of a Sturtevant steam fan connected to a Sturtevant fireproof heater and galvanized iron distributing pipes, but the entire material and workmanship for making the rooms fireproof was furnished by the B. F. Sturtevant Co.

TRENTON NOTES.

THE taking of testimony in the application of the Eureka Fire Hose Co., of Jersey City, for an order restraining the Eureka Rubber Manufacturing Co., of Trenton, from using the word "Eureka" as a trade mark upon goods it manufactures was resumed before Vice-Chancellor John R. Emory, in Newark, on February 24. The hearing in this case was begun before the vice-chancellor on December 21, and on December 24 was adjourned until the February date. Former Judge Gilbert Collins, Krouse & Perkins, and R. V. Lindabury represented the plaintiffs, and the defendants were represented by former Judge William M. Lanning and J. V. B. Wicoff. The questions at issue have already been stated in THE INDIA RUBBER WORLD.

=The Farrier Hoof Pad Co. applied to the court of chancery on February 19 for an injunction to restrain Albert E. Wheatcroft from assigning or in any manner disposing of an invention in hoofpads. The Farrier Hoof Pad Co. was organized in the fall of 1902 for the purpose of manufacturing hoofpads according to letters patent No. 682,302, issued to Wheatcroft. A plant was established at the works of the Trenton Rubber Manufacturing Co., and it is claimed that an agreement was made with Wheatcroft by which he was to assign to the company an undivided one-half interest in the patent and any other patent that might be issued to him. Then Wheatcroft was to receive

21 shares of stock and was to be employed as agent of the company on a salary. The bill alleges that Wheatcroft is about to enter the employ of a concern making hoofpads of a different kind, and that he refuses to execute an assignment of his invention to the plaintiff company.

=George Ashmore, 49 years old, was injured in an accident at the Home Rubber Co.'s factory on February 11. He was mixing packing at a mill when his arm was caught in the rolls and the limb was drawn into the mill to the shoulder before the machinery could be stopped. His arm was mashed to a pulp, his neck and shoulder gouged and his back broken. He was taken to McKinley Hospital where his arm was amputated. Then the broken piece of the vertebrae was removed and the spinal column fastened together with a silver wire. Ashmore died in the hospital two days later. He had been employed in the factory for 15 years.

NEW INCORPORATIONS.

THE Vehicle Apron and Hood Co. (Columbus, Ohio), January 13, 1904, under Ohio laws; capital, \$100,000; to manufacture and sell rubber curtains, storm fronts for carriages, etc. Incorporators: John P. Gordon, J. E. Jones, F. O. Henson, C. A. Charles, E. M. DuBois. The business has been in existence since March, 1901, and the products have been mentioned before in these pages.

=American Pneumatic Cushion Co., January 29, 1904, under New York laws, to manufacture pneumatic rubber cushions; capital, \$5000. Directors: C. B. F. Benton, East Orange, New Jersey; T. L. Buck, Brooklyn, N. Y.; H. Hoelger, New York city. THE INDIA RUBBER WORLD is informed that the company are not yet prepared to make any statement for publication.

=The Canton Waterproof Clothing Co., January 19, 1904, under Ohio laws; capital authorized, \$10,000. Incorporators: E. G. Howe, Joe Klosterman, R. E. Working, Ed. L. Smith, George W. Butler. Mr. Howe, the manager, reports: "We manufacture coats from rubberized cloth of different grades; also rubber sleeve protectors. We also make a large line of canvas waterproof suits, using an oil interlining. We also intend to manufacture several other kinds of rubber goods as soon as we can complete arrangements to do so."

TRADE NEWS NOTES.

THE Chicago Rubber Brokerage Co. have opened an office at No. 154 Lake street, Chicago, for the handling of all kinds of manufactured rubber goods, representing several factories. The manager is J. Hurd Thompson, formerly of the rubber trade in Omaha, Nebraska, and who for several years past has been traveling in the middle west, selling mechanical rubber goods. The new house does not carry any stock at present, but probably will do so later on.

=The Boston Woven Hose and Rubber Co., on Monday, February 8—the day following the outbreak of the great fire in Baltimore, and while the fire was still raging—received an order by long distance telephone for 20,000 feet of fire department hose for prompt shipment to that city. This order was of interest for its size, as well as for the promptness with which the Baltimore officials acted.

=The G & J Tire Co. (Indianapolis, Indiana) have received an order for 3600 pairs of bicycle tires, for use in the Japanese military service. The company inform THE INDIA RUBBER WORLD that the Japanese government are building their own bicycles, and using the "G & J" tires as their equipment.

=George Peckham, a capitalist of Springfield, Ohio, has been elected president of the Victor Rubber Co., of that city, with a factory at Snyderville, Ohio, and it is understood that he

has purchased the interest of John S. Harshman, the retiring president, and that the present capital of \$100,000 is to be largely increased.

=A meeting of the stockholders of the Goshen Rubber Works (Goshen, Indiana), several of whom live at a distance, was held at that place on February 17, and it is reported that the object of the meeting was to plan an important increase of the plant.

=The New York-Broadway Rubber Tire Co. (distributors in the New York territory for the tires of the Goodyear Tire and Rubber Co.) have leased for three years the three story building, No. 253 West Forty-seventh street, New York.

=The Joseph Banigan Rubber Co., of Providence, Rhode Island, with \$1,500,000 capital, have formed a corporation in Illinois, to cover their business in that state, with \$175,000 capital.

=President Lewis D. Parker, of the Hartford Rubber Works Co., during the month made a business trip to the Pacific coast.

=The Singer Manufacturing Co., on account of the great fire in Baltimore, which burned out their manufacturing department, have secured a temporary location at No. 11 South Eutaw street, in that city.

=Notwithstanding the strike in the rubber industry prevailing in their town, The Eureka Rubber Manufacturing Co. of Trenton, N. J., do not seem to be much affected. Their January shipments were the largest since they began business, and included a carload of steam hose, suction hose, sheet packing, and other high grade goods for the United States government; a carload of garden hose; and a carload of fruit jar rings.

PERSONAL MENTION.

MR. HENRY C. PEARSON, Editor of THE INDIA RUBBER WORLD, has returned from a trip around the world, in the interest of this Journal, involving an absence of several months, during which time he made a careful study of the important work in rubber planting in progress in the Far East, the results of which will be reported in our forthcoming issues.

=Mr. George A. Lewis, president of the Beacon Falls Rubber Shoe Co., is spending a few weeks at Aiken, South Carolina.

=Mr. Charles H. Dale, president of the Rubber Goods Manufacturing Co. has been taking his annual vacation at Palm Beach, Florida.

=Frederick W. Peck, a well known citizen of Chelsea, Massachusetts, died on February 17, aged about 54 years. For several years he had been engaged in handling scrap rubber.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co. :

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Jan. 23	5,985	13 $\frac{7}{8}$	12 $\frac{1}{8}$	6,010	50 $\frac{3}{8}$	43 $\frac{1}{4}$
Week ending Jan. 30	8,260	14 $\frac{5}{8}$	13	5,365	54 $\frac{1}{2}$	50 $\frac{1}{8}$
Week ending Feb. 6	2,110	13 $\frac{3}{8}$	10 $\frac{1}{2}$	1,745	52	45 $\frac{1}{2}$
Week ending Feb. 13	560	11 $\frac{3}{4}$	10 $\frac{1}{2}$	1,300	49	46
Week ending Feb. 20	570	12 $\frac{1}{8}$	11 $\frac{3}{8}$	820	48 $\frac{3}{4}$	47 $\frac{1}{4}$
Week ending Feb. 27	150	12	12	860	47 $\frac{3}{4}$	46

RUBBER Goods Manufacturing Co. :

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Jan. 23	18,380	21 $\frac{7}{8}$	18 $\frac{1}{4}$	2,366	79 $\frac{1}{4}$	75
Week ending Jan. 30	11,850	22 $\frac{1}{4}$	20 $\frac{1}{2}$	587	79 $\frac{3}{4}$	78 $\frac{1}{2}$
Week ending Feb. 6	4,680	21	18 $\frac{3}{8}$	30	75	75
Week ending Feb. 13	1,810	19 $\frac{1}{4}$	18 $\frac{1}{2}$	310	78	78
Week ending Feb. 20	2,300	20 $\frac{3}{8}$	19 $\frac{1}{4}$	....	...	....
Week ending Feb. 27	1,910	19 $\frac{3}{4}$	18 $\frac{3}{8}$	42	70 $\frac{1}{2}$	78

THE PARA RUBBER PLANTATION CO.

THERE exists at Ciudad Bolivar, in Venezuela, a daily journal, printed in Spanish, under the title *El Anunciador*, whereof we have received the issue dated January 9, 1904. Not the least interesting feature of that particular journal appears beneath the heading "Caucho"—the Spanish word for India-rubber—and that our readers may have the benefit of it, a translation of the article is given below. It may be added that THE INDIA RUBBER WORLD had not before seen or heard of this letter, and that it possesses no knowledge of the person whose name is signed to the letter :

SAN CARLOS DE RIO NEGRO, December 2, 1903.

TO THE EDITOR OF THE INDIA RUBBER WORLD, New York—*Dear Sir* : I have just read in the last issue of your esteemed review an article entitled "How 'the Para Rubber Plantation Co.' Works," and, bearing in mind what is stated in that article, I hasten to furnish you the following data :

First. Up to the present time that company has done no work, and it does not possess a single kilogram of Caoutchouc in the regions of the Casiquiare or anywhere else in this country. Those 300,000 pounds spoken of, exist only in the imagination of the company.

Second. The alleged transfer of a perpetual lease made to the Para Rubber Plantation Co., is obscure, dishonest, and, besides, it is entirely null and void according to the constitution and laws of Venezuela. These entangled transactions will cause the stockholders of the company serious trouble.

Third. The invalidity I refer to will be brought before the proper authorities in a short time, and these authorities will order its abrogation, because, under the law in force, lands exceeding 500 hectares cannot be sold, and in accordance with the statement of the company, it appears that the company has bought 900,000 hectares !

Fourth. The Para Rubber Plantation Co. does not possess, and it has not bought from anyone in this locality, any properties whatever, of any kind, and no one here is acquainted with any of the gentlemen forming such a company.

Fifth. The reports given by Dr. Lucien Morisse are not only exaggerated in regard to the production of Caoutchouc, but such information has already been refuted by a Venezuelan writer, who formerly resided here.

If you wish me to furnish you with further particulars, please write me at Ciudad Bolivar (Venezuela). Respectfully yours,

RICARDO BUENO CAMICO.

The above letter in *El Anunciador* is followed by a reproduction, in Spanish, of the article in THE INDIA RUBBER WORLD of October 1, 1903 (page 19)—"How the 'Para Rubber Plantation Co.' Works"—to which the letter refers. THE INDIA RUBBER WORLD has also received a pamphlet printed at Caracas, entitled "El Caucho en Venezuela," by B. Tavera Acosta, which is devoted to a refutation of the statements made by Dr. Lucien Morisse regarding rubber on the Casiquiare, and which serve as the basis of the printed prospectus of the Para Rubber Plantation Co. Señor Tavera-Acosta, by the way, is the Venezuelan writer mentioned in the above communication, and his pamphlet in reply to Morisse will have further attention in these pages.

RUBBER SHOES IN AUSTRALIA.—The Canadian Commercial Agent at Sydney, New South Wales, reports [November 9, 1903]: "Canada has done a good trade in rubber shoes, but the Canadian prices have recently been raised and properly so, I think, but the consequence is that a Russian manufacturer has accepted the orders at the old price and has obtained the business for this season. Whether the goods will be equal in quality to the Canadian product is yet to be determined." Russian shoes have not been offered in Australia hitherto.

REVIEW OF THE CRUDE RUBBER MARKET.

THE prices of rubber maintained an almost continuous high figure during February, and at the close were from 2 to 4 cents above the corresponding period in January.

The prices advanced during the first week of the month until Upriver Pará was quoted at about 1.05 @ 1.06, and then there was less activity and prices sagged until about the 19th instant, when the same grades were purchasable at 98 @ 99. Immediately after the Antwerp auction, however, which was February 24, all prices took a sharp upward turn, and at the close 1.06 @ 1.07 were ruling quotations for fine new Upriver Pará, with little or no rubber in the market for sale. Islands rubber closed at about 1.03.

This strong ending was in spite of the fact that the receipts during the month were unusually large. These increased receipts, however, have not apparently increased visible supplies to any degree, for on the last day of the month it was asserted that only scattering and small lots of Pará could be obtained, and the large importers were taking no orders except from customers with whom they had contracts. The immense amount of rubber taken by manufacturers was largely on account of extensive purchases by the United States Rubber Co., and some buying by the Rubber Goods Manufacturing Co. There is practically no old rubber in the market. It is not believed that the stocks of the manufacturers, as a rule, are large.

At the Antwerp sales of Africans, on February 24, prices were on an average of 3 to 4 cents higher than they were last month. There were offered only 370 tons as against 684 tons in January, and the bidding was very active. Almost the entire offering was taken by the Europeans, the American idea of prices for the most part, being too low. Lopori ball prime sold 93 @ 94, and other grades proportionately high.

The arrivals at Manáos, now the most important prime market for Pará grades, as shown in detail further along in this report, are measurably larger than last year, though about the same as in the year before that. The smaller receipts at Manáos in the intermediate year were due to the disturbances on the Acre which put a check to shipments from that region. The arrivals at Pará thus far this season (including Caucho) have been, in tons:

	1900-01.	1901-02.	1902-03.	1903-04.
To January 31....	13,740	16,490	14,650	17,720
" February 28....	16,030	19,870	19,410	a 20,320

[a—To February 18, 1904.]

Reports have been current of purchases on the Amazon, by a European house, amounting to 1500 tons in January—an amount presumably in excess of any normal demand from their customers. On the other hand, a circular has been received on this side of the Atlantic from an English firm, attributing the rise in rubber to unusually large purchases by an American house, with a view to preventing the heavy receipts at Pará from leading to a decline in prices. Such conflicting reports usually prevail on the two sides of the Atlantic, and the problem of what really makes the price of Pará rubber continues unsolved. On this subject, however, the following statement, by a New York rubber merchant, may be quoted:

"Rubber is now selling at Pará at a price equal practically to the ruling quotations at New York. To move it here would involve the cost of freight and insurance, and the shrinkage in weight of rubber. Yet rubber is being offered here for future delivery at a very slight advance over spot rates, which means that the sellers stand to lose in the event of high prices being

maintained. And herein is an explanation of the extreme high prices of last September. There was a very large 'short' interest at the time, and visible supplies declined to an unusually low figure. The result was that when sellers on contracts came to make deliveries, the supplies were so closely controlled as to force them to pay roundly for the rubber they required."

Which would indicate that, if rubber prices at any time are a result of speculative movements, it may be due to efforts to depress the market as well as to bring about an advance unwarranted by the statistical position.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on February 29—the current date:

PARA.	Mar. 1, '03.	Feb. 1, '04.	Feb. 29
Islands, fine, new.....	84@85	99@100	102@103
Islands, fine, old.....	90@91	@	@
Upriver, fine, new.....	89@90	104@105	106@107
Upriver, fine, old.....	94@95	None here	108@109
Islands, coarse, new.....	52@53	64@ 65	66@ 67
Islands, coarse, old.....	@	None here	None here
Upriver, coarse, new.....	72@ 73	83@ 84	83@ 84
Upriver, coarse, old.....	@	85@ 86	85@ 86
Caucho (Peruvian) sheet.....	53@54	64@ 65	66@ 67
Caucho (Peruvian) ball.....	65@66	75@ 76	76@ 77

The market for other sorts in New York on which the advance has also been very material, is as follows:

AFRICAN.	CENTRALS.
Sierra Leone, 1st quality 92 @93	Esmeralda, sausage... 75 @76
Massai, red..... 92 @93	Guayaquil, strip..... 67 @68
Benguella. 74 @75	Nicaragua, scrap... 74 @75
Cameroon ball..... 66 @67	Panama, slab..... 57 @58
Accra flake..... 36 @37	Mexican, scrap..... 73 @74
Accra buttons..... None here	Mexican, siab..... 54 @55
Lopori ball, prime.... 94 @95	Mangabeira, sheet.... 57 @58
Lopori strip, prime.... 85 @86	EAST INDIAN.
Ikelemba..... 94 @95	Assam..... 81 @82
Madagascar, pinky... 84 @85	Borneo..... @

Late Pará cables quote:

	Per Kilo.	Per Kilo.
Islands, fine.	6\$400	Upriver, fine..... 7\$350
Islands, coarse.....	3\$600	Upriver, coarse..... 5\$450

Exchange, 12 $\frac{1}{8}$ d.

Last Manáos advices:

Upriver, fine.....	7\$200	Upriver, coarse.....	5\$100
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Exchange, 12 $\frac{1}{8}$ d.

NEW YORK RUBBER PRICES FOR JANUARY (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine.....	94@105	86@92	77@86
Upriver, coarse.....	77@ 83	71@76	62@65
Islands, fine.....	90@102	84@89	75@81
Islands, coarse	56@ 65	53@62	47@52
Cametá, coarse.....	55@ 64	55@64	50@52 $\frac{1}{2}$

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound; again no change of importance to be noted:

Old Rubber Boots and Shoes—Domestic.....	6 $\frac{7}{8}$ @ 7
Do —Foreign.....	6 $\frac{1}{4}$ @ 6 $\frac{3}{4}$
Pneumatic Bicycle Tires.....	4 @ 4 $\frac{1}{8}$
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	8 $\frac{3}{4}$ @ 9
Heavy Black Rubber.....	4 $\frac{1}{4}$
Air Brake Hose.....	2 $\frac{1}{2}$ @ 2 $\frac{3}{4}$
Fire and Large Hose.....	2
Garden Hose.....	1 $\frac{1}{2}$
Matting.....	1

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.					
	Fine and Medium.	Coarse.	Total 1904.	Total 1903.	Total 1902.
Stocks, January 1.....tons	56	0 =	56	72	1139
Arrivals, January.....	948	470 =	1418	1624	1330
Aggregating.....	1004	470 =	1474	1696	2469
Deliveries, January.....	941	469 =	1410	1443	1130
Stocks, January 31....	63	1 =	64	253	1339
PARÁ.					
	1904.	1903.	1902.	1904.	1903.
Stocks, Jan. 1.....tons	370	365	150	545	885
Arrivals, January....	3760	2500	3825	1145	1190
Aggregating.....	4130	2865	3975	1690	2075
Deliveries, January...	3565	2710	3465	1100	1025
Stocks, Jan. 31....	565	155	510	590	1050
ENGLAND.					
	1904.	1903.	1902.	1904.	1903.
World's visible supply, January 31.....tons	3717	2783	5329		
Pará receipts, July 1 to January 31.....	16,235	13,846	16,079		
Para receipts of Caucho, same dates.....	1519	924	1381		
Afloat from Pará to United States, Jan. 31..	1478	740	930		
Afloat from Pará to Europe, January 31.....	1020	585	1320		

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At the first large sale of the year, on January 29, when about 715 tons of rubber were offered and 687 tons found buyers, the prices averaged about 6½ per cent. higher than at the large sale in December. Some sorts as Lopori and Aruwimi advanced as much as 8@10 per cent. Considerable of the buying was attributed to the United States. The principal lots realized prices as follows:

	Estimation.	Sold at.
31 tons Lopori I.....francs	9.10	9.92½
26 " Lopori II.....	7.	8.
72 " Uelé Strips.....	8.50	9.05
22 " Aruwimi Strips.....	8.15	9.
24 " Mongalla strips.....	9.15	9.75
24 " Batouri.....	8.65	9.12½
20 " Upper Congo Red.....	9.45	10.05
45 " Upper Congo ordinary.....	10.02½	9.40

At a small sale of 21 tons on February 5 prices were practically unchanged. At the next regular monthly sale, on February 26, about 370 tons of Congo sorts will be offered.

C. SCHMID & CO., SUCCESSEURS.

Antwerp, February 17, 1904.

ANTWERP RUBBER STATISTICS FOR JANUARY.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, Jan. 1.....kilos	610,900	658,105	414,709	614,039	291,991
Arrivals in January..	522,259	171,860	636,243	543,626	475,880
Congo sorts	385,781	136,541	613,876	443,073	439,996
Other sorts	136,478	35,319	22,367	100,553	44,884
Aggregating....	1,133,159	829,965	1,050,952	1,157,665	767,871
Sales in January.....	706,994	695,830	407,253	509,034	225,773
Stocks, Jan. 31 ..	426,165	134,135	643,699	648,631	542,098
Arrivals since Jan. 1	522,259	171,860	636,243	543,626	475,880
Congo sorts	385,781	136,541	613,876	443,073	439,996
Other sorts	136,478	35,319	22,367	100,553	44,884
Sales since Jan. 1...	706,994	695,830	407,253	509,034	225,773

RUBBER ARRIVALS AT ANTWERP.

FEB. 9.—By the *Philippeville*, from the Congo:

Bunge & Co.....(Société Générale Africaine) kilos	103,000
Do	33,000
Do	1,300
Société A B I R.....	96,500
Société Equatoriale Congolaise..(Société L'Ikelemba)	1,800
Comptoir Commercial Congolais.....	6,000

Charles Dethier....(La Haut Sangha)	16,900
Do	5,000
Comptoir des Produits Coloniaux.....(Messageries fluviales du Sénégal)	6,600
Do	3,000
Société Coloniale Anversoise..(Belge du Haut Congo)	12,600
Do	6,500
L. & V. Van de Velde.....(Cie. du Kasai)	67,000
W. Mallinckrodt & Co.....(Alimaïenne)	2,000
Comptoir Commercial Anversoise.....	600
M. S. Cols.....(Société Baniembe)	700
Do	3,800 366,300

Liverpool.

EDMUND SCHLÜTER & CO. report that the statistical position would hardly appear to justify the quick advance in rubber which has been maintained during the month. Yet, taking into consideration the small increase in the visible supply of Pará sorts, after the large receipts since January 1, and the small estimates of receipts during the remaining months of the season, the higher prices, with fluctuations, have probably come to stay. Their circular embraces the following statistics:

Pará receipts in January, 1904, were.....	4,250 tons
" " " " 1903, "	2,490 "
Increase in 1904.....	1,760 "
Pará receipts in July-January, 1903-04, were	17,830 "
" " " " 1902-03, "	14,740 "

Increase in 1903-4..... 3,090 "

The visible supply on January 31 was:

	1901.	1902.	1903.	1904.
Tons.....	3896	5272	3008	4342

WILLIAM WRIGHT & CO. report [February 1]:

Fine Pará.—The market has been exceedingly active, prices having advanced 4d. per pound. In spite of the fact that crop receipts are 2930 tons, or about 20 per cent. in excess of last season, the demand in Pará has been exceptionally strong, all supplies being eagerly competed for at advancing rates. We cannot help thinking that a good deal of the advance has been owing to the necessity to cover forward sales. Undoubtedly the demand is very good, but at this stage of the crop we think an advance of 4d. per pound is not justified, the market closing very firm with sellers firm at 4s. 4d. Stocks are small and well held. Forward: a good business done at advancing rates closing with no sellers under 4s. 4d.

Africans have been in active request and a large business done at advancing rates. Sierra Leone has advanced from 3s. 5¼d. @ 3s. 8½d.; Cape Coast lump 1s. 11¼d. @ 2s. 2d.; Cameroon 2s. 6d. @ 2s. 7d., and other grades in proportion.

On account of advancing years Edward Till has retired from the firm of Edward Till & Co, brokers, Mincing lane, London, which in future will be continued under the same style by Geoffrey Hoare and Charles Bower.

Bordeaux.

PRICES FEBRUARY 15—FRANCS PER KILO.

Conakry niggers... 10 30@10.45	Tamatave..... 8.25@ 8.60
Soudan twists..... 8.75@ 9.40	Majunga..... 7. @ 7.60
Soudan niggers 9 80@10.	Niggers..... 4.50@ 5.25
Cassamance, A..... 7.50@ 7.55	Lahou cakes 7 50@ 8.20
Cassamance, A. M.. 6.75@ 6.85	Lahou lumps..... 5.60@ 6.25
Cassamance, B..... 5.85@ 5.95	Mexican scraps 8.50@ 9.
Madagascar :	Mexican slabs... .. 7.50@ 8.50

Ceylon Rubber Exports.

FOR THE CALENDAR YEAR 1903.

To Great Britain.....pounds	39,456
" Germany.....	1,672
" Belgium.....	156
" United States.....	400
Total, 1903.....pounds	41,684
Total, 1902.....	21,168
Total, 1901.....	7,392

Rubber Receipts at Manaos.

DURING January and the first seven months of the crop season for three years [courtesy of Messrs. Witt & Co.] :

FROM—	JANUARY.			JULY-JANUARY.		
	1904.	1903.	1902.	1904.	1903.	1902.
Rio Purús—Acre..... tons	1650	720	1556	3851	2635	3895
Rio Madeira.....	247	178	250	1791	1478	1860
Rio Jurua.....	675	1226	747	2110	2015	2340
Rio Javary—Iquitos...	344	257	87	1789	1252	972
Rio Solimões.....	104	154	227	570	1076	1274
Rio Negro.....	113	126	92	267	325	187
Total.....	3133	2661	2959	10,378	8781	10,528
Caucho.....	712	596	517	1612	1196	1613
Total.....	3845	3257	3476	11,990	9977	12,141

Gutta-Percha.

WEISS & Co. (Rotterdam) report exports from Singapore for the five last calendar years as follows :

	1899.	1900.	1901.	1902.	1903.
Tons.....	7280	6155	5590	4236	3286

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

February 1.—By the steamer *Basil*, from Manáos and Pará :

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	269,100	72,100	127,800	22,300	491,300
United States Rubber Co.	329,900	65,400	127,800	46,700	569,800

PARA RUBBER VIA EUROPE.

JAN 28.—By the <i>Majestic</i> =Liverpool:	POUNDS.
William Wright & Co (Fine).....	11,700
William Wright & Co. (Coarse).....	11,200
FEB 1.—By the <i>Etruria</i> =Liverpool:	
A. T. Morse & Co (Fine).....	14,700
FEB 5.—By the <i>Trinidad</i> =Antwerp:	
A. T. Morse & Co. (Fine).....	9,600
FEB 5.—By the <i>Trinidad</i> =Antwerp:	
A. T. Morse & Co. (Fine).....	12,500
FEB 8.—By the <i>Umbria</i> =Liverpool:	
Poel & Arnold (Caucho).....	6,500
FEB 13.—By the <i>Victoria</i> =Liverpool:	
A. T. Morse & Co. (Fine).....	22,500
FEB 13.—By the <i>Pennsylvania</i> =Hamburg:	
Poel & Arnold (Fine).....	18,000
Poel & Arnold.....	4,500
FEB 18.—By the <i>Celtic</i> =Liverpool:	
A. T. Morse & Co. (Fine).....	53,000
George A. Alden & Co. (Fine).....	20,000
FEB 15.—By the <i>Bretagne</i> =Havre:	
United States Rubber Co. (Fine).....	22,000
Poel & Arnold (Fine).....	9,000
FEB 15.—By the <i>St. Paul</i> =London:	
United States Rubber Co. (Coarse)...	35,000
FEB 16.—By the <i>Invernia</i> =Liverpool:	
George A. Alden & Co. (Fine).....	60,000
Poel & Arnold (Fine).....	80,000
Poel & Arnold (Coarse).....	16,000
A. T. Morse & Co. (Fine).....	17,000
FEB 20.—By the <i>Cedric</i> =Liverpool:	
George A. Alden & Co. (Fine).....	22,000

OTHER ARRIVALS AT NEW YORK**CENTRALS.**

JAN. 25.—By the <i>Vigilancia</i> =Mexico:	POUNDS.
H. Marquardt & Co.....	2,700
Thebaud Brothers.....	1,500
Harburger & Stack.....	1,500
E. Steiger & Co.....	1,000
American Trading Co.....	500
For Hamburg.....	5,000
JAN. 26.—By the <i>Valencia</i> =Cartagena:	
Kunhardt & Co.....	2,500
Isaac Kuble & Co.....	1,500
A. D. Straus & Co.....	300
Pedro A. Lopez.....	200
JAN. 26.—By the <i>Allianca</i> =Colon:	
Meyer Hecht.....	5,300

CENTRALS—Continued.

Fidanque Bros. & Co.....	1,000
E. B. Strout.....	1,400
W. Loalza & Co.....	1,000
Eggers & Heinlein.....	1,100
Gillespie Bros. & Co.....	400
Isaac Brandon & Bros.....	400
JAN. 26.—By the <i>Saxonia</i> =Liverpool:	
Poel & Arnold.....	3,300
JAN. 27.—By the <i>Tennison</i> =Bahia:	
Hirsch & Kaiser.....	16,000
J. H. Rossbach & Bros.....	13,300
FEB. 1.—By the <i>El Sud</i> =New Orleans:	
A. T. Morse & Co.....	16,000
Manhattan Rubber Mfg. Co.....	6,500
FEB. 1.—By the <i>Etruria</i> =Liverpool:	
Poel & Arnold.....	11,000
Eggers & Heinlein.....	3,300
FEB. 2.—By the <i>Yucatan</i> =Colon:	
Hirzel, Feltman & Co.....	19,700
G. Amsluek & Co.....	7,700
A. Santos & Co.....	7,200
Livingstone & Co.....	5,100
Meyer Hecht.....	4,400
American Trading Co.....	2,800
Harburger & Stack.....	3,000
H. Marquardt & Co.....	2,000
Dumarest & Co.....	3,500
Roldan & Van Sickle.....	3,700
Lawrence Johnson & Co.....	2,400
Silva Bussenius & Co.....	2,000
Rosenthal Sons & Co.....	1,800
A. M. Capen's Sons.....	1,400
R. G. Barthold.....	1,100
Mecke & Co.....	500
Isaac Brandon & Bros.....	500
Kunhardt & Co.....	300
FEB. 3.—By the <i>Terence</i> =Bahia:	
J. H. Rossbach & Bros.....	19,500
FEB. 3.—By the <i>Altai</i> =Greytown, etc:	
G. Amsluek & Co.....	4,500
E. B. Strout.....	1,500
Andreas & Co.....	600
Graham, Hinkley & Co.....	600
Isaac Brandon & Bros.....	400
D. A. DeLima & Co.....	1,000
FEB. 4.—By the <i>El Alba</i> =New Orleans:	
A. T. Morse & Co.....	4,500
Manhattan Rubber Mfg. Co.....	2,000
A. N. Rotholz.....	4,000
FEB. 6.—By the <i>Esperanza</i> =Mexico:	
E. Steiger & Co.....	1,600
H. Marquardt & Co.....	600
Samuels & Cummings.....	500
For Hamburg.....	4,000
San Joseph Iron Co.....	2,500
FEB. 8.—By the <i>Umbria</i> =Liverpool:	
George A. Alden & Co.....	18,500
Poel & Arnold.....	2,200

CENTRALS—Continued.

FEB. 8.—By the <i>Comus</i> =New Orleans:	
A. T. Morse & Co.....	4,000
FEB. 9.—By the <i>City of Washington</i> =Colon:	
Meyer Hecht.....	3,700
Isaac Brandon & Bros.....	3,400
Piza Nephews & Co.....	2,000
G. Amsluek & Co.....	1,400
L. N. Chemedli & Co.....	900
Jimenez & Escobar.....	400
John Boyd, Jr. & Co.....	200
Barthling & De Leon.....	200
FEB. 13.—By the <i>Pennsylvania</i> =Hamburg:	
Poel & Arnold.....	24,000
FEB. 13.—By the <i>Celtic</i> =Liverpool:	
George A. Alden & Co.....	26,600
Poel & Arnold.....	17,000
FEB. 13.—By the <i>El Mar</i> =New Orleans:	
A. T. Morse & Co.....	3,000
Eggers & Heinlein.....	2,000
FEB. 18.—By the <i>Siberia</i> =Cartagena, etc.:	
Gulteman, Rosenfeld & Co.....	1,500
Jimenez & Escobar.....	1,500
Joaquin Ferro.....	1,100
G. Amsluek & Co.....	1,000
Andreas & Co.....	500
Isaac Brandon & Bros.....	500
Graham, Hinkley & Co.....	400
For Europe.....	3,500
FEB. 17.—By the <i>Seguranca</i> =Colon:	
Hirzel, Feltman & Co.....	21,300
G. Amsluek & Co.....	7,300
George A. Alden & Co.....	6,000
American Trading Co.....	3,700
Lawrence Johnson & Co.....	2,800
A. Santos & Co.....	2,500
Dumarest & Co.....	1,800
Meyer Hecht.....	1,300
Isaac Brandon & Bros.....	1,100
Fidanque Bros. & Co.....	600
Piza, Nephews & Co.....	500
Rosenthal Sons & Co.....	600
R. G. Barthold.....	600

AFRICANS.

JAN. 26.—By the <i>Kronland</i> =Antwerp:	POUNDS.
A. T. Morse & Co.....	69,000
JAN. 26.—By the <i>Augusta Victoria</i> =Hamburg:	
George A. Alden & Co.....	11,000
JAN. 26.—By the <i>Saxonia</i> =Liverpool:	
Poel & Arnold.....	65,000
JAN. 27.—By the <i>Rotterdam</i> =Rotterdam:	
George A. Alden & Co.....	17,000
JAN. 28.—By the <i>Majestic</i> =Liverpool:	
George A. Alden & Co.....	22,500
United States Rubber Co.....	11,500

New York Commercial Co.	135,000	24,200	43,700	.....=	202,900
A. T. Morse & Co.....	57,900	15,500	66,700	3,000=	143,100
William Wright & Co.....	21,600	1,100	19,500	.....=	42,200
Lionel Hagenaers & Co..	10,200	.....	6,600	.....=	16,800
Hagemeyer & Brunn.....	5,700	2,400	900	.....=	9,000
Total.....	829,400	180,700	393,000	72,000=	1,475,100

February 13.—By the steamer *Hilary*, from Manáos and Pará :

United States Rubber Co.	359,700	70,300	134,100	8,500=	572,600
Poel & Arnold.....	272,800	100,300	109,300	14,600=	497,000
A. T. Morse & Co.....	174,900	30,200	86,000	80,000=	371,100
New York Commercial Co.	114,400	25,600	86,100	2,900=	229,000
William Wright & Co.....	22,000	1,900	34,500	.....=	58,400
Hagemeyer & Brunn.....	5,700	2,400	900	10,500=	19,500
Lionel Hagenaers & Co..	8,700	.....	4,000	.....=	12,700
Thomsen & Co.....	900	.....	3,900	.....=	4,800
Total.....	959,100	230,700	458,800	116,500=	1,765,100

February 23.—By the steamer *Cametense*, from Manáos and Pará :

Poel & Arnold.....	385,400	117,100	173,400	101,600=	777,500
A. T. Morse & Co.....	295,500	51,400	171,900	54,900=	573,700
New York Commercial Co.	338,800	66,300	140,800	1,100=	547,000
United States Rubber Co.	125,100	24,100	83,200	42,600=	275,000
Lionel Hagenaers & Co..	9,200	.....	7,100	.....=	16,300
Hagemeyer & Brunn.....	2,400	700	600	10,800=	14,500
William Wright & Co.....	.....	.....	12,000	.....=	12,000
Total.....	1,156,400	259,600	589,000	211,000=	2,216,000

[NOTE.—The steamer *Bernard* from Pará due at New York on March 6, has on board 940 tons of Rubber and 25 tons of Caucho.]

AFRICANS—Continued.

JAN. 30.—By the <i>Belgravia</i> =Hamburg:			
Poel & Arnold	30,000		
George A. Alden & Co.	11,500		
Robinson & Tallman	4,500	46,000	
FEB. 1.—By the <i>Etruria</i> =Live: pool:			
Poel & Arnold	49,000		
United States Rubber Co.	6,500		
Robinson & Tallman	2,500	58,000	
FEB. 1.—By the <i>Minnecha</i> =London:			
Henry A. Gould Co.	6,500		
Poel & Arnold	2,500	9,000	
FEB. 5.—By the <i>Oceanic</i> =Liverpool:			
A. T. Morse & Co.	39,000		
George A. Alden & Co.	45,000	84,000	
FEB. 5.—By the <i>Bluecher</i> =Hamburg:			
George A. Alden & Co.	82,000		
A. T. Morse & Co.	50,000		
Poel & Arnold	19,000		
Rubber Trading Co.	3,500	154,500	
FEB. 8.—By the <i>Bovic</i> =Liverpool:			
Poel & Arnold		56,000	
FEB. 8.—By the <i>New York</i> =London:			
United States Rubber Co.		30,000	
FEB. 8.—By the <i>Umbria</i> =Liverpool:			
Poel & Arnold	45,000		
United States Rubber Co.	25,000		
A. T. Morse & Co.	9,000	79,000	
FEB. 11.—By the <i>Vaderland</i> =Antwerp:			
Poel & Arnold		8,000	
FEB. 13.—By the <i>Celtic</i> =Liverpool:			
United States Rubber Co.	140,000		
Poel & Arnold	13,000		
A. T. Morse & Co.	17,000	170,000	
FEB. 15.—By the <i>St. Paul</i> =London:			
George A. Alden & Co.		15,000	
FEB. 16.—By the <i>Ivernia</i> =Liverpool:			
George A. Alden & Co.	42,000		
United States Rubber Co.	25,000		
Poel & Arnold	16,000		
A. T. Morse & Co.	7,000		
Rubber Trading Co.	10,000	101,000	
FEB. 17.—By the <i>Kronland</i> =Antwerp:			
George A. Alden & Co.	305,000		
Poel & Arnold	200,000		
A. T. Morse & Co.	95,000		
To order	30,000	630,000	

AFRICANS—Continued.

FEB. 20.—By the <i>Cedric</i> =Liverpool:			
Poel & Arnold	13,000		
George A. Alden & Co.	10,000		
A. T. Morse & Co.	9,000	32,000	
EAST INDIAN.			
JAN. 25.—By the <i>Philadelphia</i> =London:			
George A. Alden & Co.	5,600		
Poel & Arnold	2,000	7,000	
FEB. 1.—By the <i>Oro</i> =Singapore:			
A. T. Morse & Co.	7,000		
Robert Brans & Co.	4,500		
To order	3,500	15,000	
FEB. 8.—By the <i>New York</i> =London:			
Poel & Arnold	67,000		
Robinson & Tallman	4,500	71,500	
FEB. 17.—By the <i>Hermiston</i> =Singapore:			
Poel & Arnold	34,000		
William Wright & Co.	4,500		
Rubber Trading Co.	4,000		
Robert Brans & Co.	3,500	46,000	
FEB. 20.—By the <i>Orono</i> =Singapore:			
To order	11,000		
Robert Brans & Co.	6,500		
William Wright & Co.	7,000	24,500	
PONTIANAK.			
FEB. 1.—By the <i>Oro</i> =Singapore:			
Robert Brans & Co.		35,000	
FEB. 17.—By the <i>Hermiston</i> =Singapore:			
William Wright & Co.	224,000		
George A. Alden & Co.	60,000	284,000	
FEB. 20.—By the <i>Orono</i> =Singapore:			
William Wright & Co.		110,000	
GUTTA-PERCHA AND BALATA.			
FEB. 1.—By the <i>Oro</i> =Singapore:			
W. R. Grace & Co.	6,500		
FEB. 5.—By the <i>Bluecher</i> =Hamburg:			
To order		4,500	
FEB. 13.—By the <i>Manitou</i> =London:			
To order		9,000	
FEB. 20.—By the <i>Orono</i> =Singapore:			
To order		2,000	

BALATA.

JAN. 25.—By the <i>Philadelphia</i> =London:			
Poel & Arnold			16,000
JAN. 30.—By the <i>Belgravia</i> =Hamburg:			
Earle Brothers			2,500
FEB. 5.—By the <i>Bluecher</i> =Hamburg:			
De Sola Lobo & Co.			4,500
FEB. 13.—By the <i>Manitou</i> =London:			
Henry A. Gould Co.			2,500
FEB. 20.—By the <i>Piermonte</i> =Demarara:			
George A. Alden & Co.		9,000	
Middleton & Co.		5,000	14,000

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—JANUARY.

Imports:	POUNDS.	VALUE.
India-rubber	4,795,010	\$3,242,109
Gutta-percha	25,631	15,443
Gutta-jelutong (Pontianak)	1,532,339	50,400
Total	6,352,980	\$3,307,952
Exports:		
India-rubber	86,128	\$ 66,795
Reclaimed rubber	142,332	17,463
Rubber Scrap Imported	1,131,031	66,288

BOSTON ARRIVALS.

	POUNDS.
JAN. 11.—By the <i>Kansas</i> =Liverpool:	
George A. Alden & Co.—African	2,375
JAN. 11.—By the <i>Oxonian</i> =Antwerp:	
George A. Alden & Co.—African	79,037
JAN. 18.—By the <i>Philadelphia</i> =London:	
George A. Alden & Co.—African	2,120
JAN. 19.—By the <i>Sachem</i> =Liverpool:	
Poel & Arnold—African	11,119
JAN. 25.—By the <i>Canopic</i> =Liverpool:	
George A. Alden & Co.—African	11,835
Total	109,486
[Value, \$75,135.]	

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
December, 1903	4,875,275	407,999	4,467,276	December, 1903	5,100,816	2,662,464	2,438,352
January-November	50,868,845	3,283,398	47,585,447	January-November	49,332,864	34,996,304	14,336,560
Twelve months, 1903	55,744,120	3,691,397	52,052,723	Twelve months, 1903	54,433,680	37,658,768	16,774,912
Twelve months, 1902	50,865,902	3,264,620	47,601,282	Twelve months, 1902	46,970,000	32,676,112	14,293,888
Twelve months, 1901	55,142,810	3,725,558	51,417,252	Twelve months, 1901	52,245,088	32,904,704	19,340,384
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
December, 1903	3,227,840	826,760	2,401,080	December, 1903	115,720		115,720
January-November	31,062,990	10,387,520	20,675,380	January-November	1,351,240	148,720	1,202,520
Twelve months, 1903	34,290,740	11,214,280	23,076,460	Twelve months, 1903	1,466,960	148,720	1,318,240
Twelve months, 1902	33,063,360	13,719,200	19,344,160	Twelve months, 1902	1,552,760	138,380	1,414,380
Twelve months, 1901	28,649,280	11,027,500	17,621,780	Twelve months, 1901	1,402,500	212,520	1,189,980
FRANCE.				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
December, 1903	1,550,120	950,180	599,940	December, 1903	169,620	5,060	164,560
January-November	15,368,100	8,680,980	6,687,120	January-November	2,614,040	27,060	2,586,980
Twelve months, 1903	16,918,220	9,631,160	7,287,060	Twelve months, 1903	2,783,660	32,120	2,751,540
Twelve months, 1902	15,389,440	8,559,540	6,829,900	Twelve months, 1902	2,634,060	15,620	2,618,440
Twelve months, 1901	16,141,180	9,550,860	6,590,320	Twelve months, 1901	2,643,740	25,080	2,618,660

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embraces the supplies for Canada consumption.

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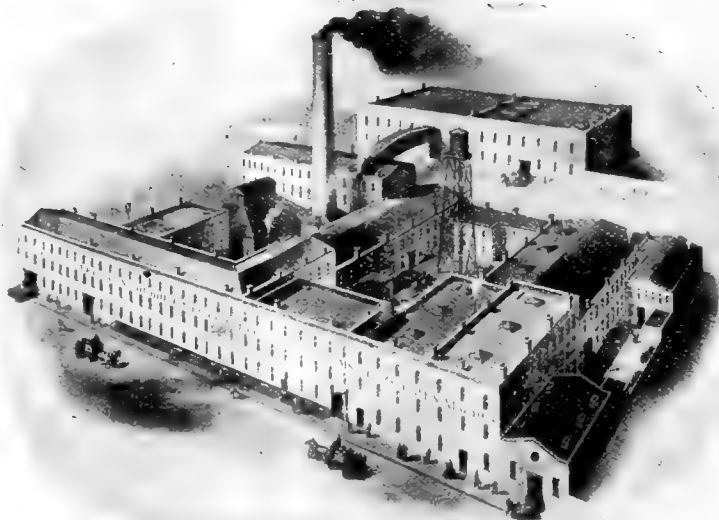
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IS THERE A "CORNER" IN RUBBER?

THE prices of rubber boots and shoes in the United States have been advanced twice within two months. The second, and most marked advance for years, was made simply by the sending out of telegrams, without warning, to the leading jobbing houses. It is worth considering, by the way, that the company signing these telegrams consumes in its factories about one-tenth of the world's total production of crude rubber. So large a concern naturally occupies a position of independence in the trade and one that enables it to act without particular regard to its competitors. In the present case, the competing companies are likely to welcome the advance, under which they can profit without the necessity of any effort on their own part to put up prices.

Without regard to the causes of the prices of raw materials, it must be recognized that the making of rubber footwear is not philanthropy, and that nowhere does any obligation exist to make and sell goods for a lower price than will yield a profit. There may be a lesson for future study in the fact that the apparently necessary advance on "rubbers" was made by a great corporation; suppose the problem had had to be met by a dozen or twenty companies, all working independently!

The situation has been made in part by the interests which have been speculating lately in cotton. The price of this material, for some time past, has been purely artificial, not merely in the United States, but all over the world. The leaders in the "bull" movement have operated daily in New York, New Orleans, Liverpool, and Alexandria (Egypt), and have practically bottled up the world's supply of cotton. It is well enough to claim that no great commodity can be "cornered"; that ultimately disaster must overtake whoever attempts anything so rash.

Nevertheless, the visible supplies of many great commodities can be controlled for awhile, and the temptation always exists for attempting it. The fact that an attempt to "corner" cotton had well nigh bankrupted certain speculators not so many months ago, did not prevent Mr. Daniel Sully from appearing on the scene just as they were dropping out, and, with his financial backers, carrying on the speculative movement in just the same way. The failure of Mr. Sully is just now one of the sensations of the day, but evidently the "bull" position in cotton is so strongly supported in some quarter or other that no promise exists of materially cheaper textiles in the near future.

The rubber industry does not stand alone now, if it ever did. High as may be the price of raw rubber, the price of other materials entering into rubber goods is also very important. The first belting produced by the rubber factories was advertised as "combination belting," on account of the employment in it of cotton duck, and the designation might properly have been continued. And the use of cotton is no less essential in other lines—in rubber footwear, for instance. Hence the importance to the rubber trade of the cotton situation. What the rubber trade can do to remedy the situation is a serious question, especially

as it is confronted by a prospect of diminished orders as a result of the advanced cost of goods.

That cotton is selling at artificial prices is beyond question; the condition of the cotton market is known to and studied by hundreds of thousands of people. The raw product is grown almost under our own eyes, by millions of American citizens, and every movement of each annual crop is patent to whoever will look on. And the consensus of opinion is that the selling price to-day is higher than is necessary to reward properly the producer, and allow fair commissions and profits to the middlemen who advance the commodity toward the mills.

Is crude rubber also selling at artificial prices? On account of the remoter sources of rubber, and the fact that its movement is largely beyond the observation of the inhabitants of the great consuming countries, the number of people familiar with the details of the trade is comparatively small. All that the average purchaser of the raw material knows is that, when seeking to cover his requirements, the price often is inconveniently high, and sudden and marked advances occur without any warning. Why should not rubber be cornered, as well as cotton?

THE INDIA RUBBER WORLD has not always credited reports that this or that rise in rubber was due simply to speculative efforts to force the consumer to pay more than a fair price for the material. But we have seen the gradual approach of what appears to be the limit of production under existing conditions. We beg leave to dissent from the suggestion by a contributor on another page of this issue, that the present high prices of rubber must have the effect of bringing larger supplies to market, and that an early decline must necessarily result. While we should be pleased to see such a development, the question presents itself, where is the increased supply to come from? The fact is that many rubber producing districts appear definitely to have reached the utmost limit of production, and the remaining districts do not appear to have the necessary working forces to make an immediate increase possible at any given time.

Year after year the world's supplies of rubber grow smaller, as compared with the demand for the commodity. Steadily the increase in transportation facilities render it easier to control the movement of the whole production within a given period, while the extension of telegraphic communication enables large traders to keep in closer touch with supply and demand in every quarter. Meanwhile the consumer, sticking to his work of making goods, and buying raw materials day by day, in the nearest market, as needed, has been content to let the market take care of itself. To-day he finds cotton controlled by speculators, beyond a doubt. Need wonder be if he suspects the same of crude rubber? A combination of consumers may become necessary to meet the situation, just as the combination of rubber footwear makers above referred to has come into existence to control prices in this line of production.

The question which heads this article is bound to come for consideration, giving the crude rubber handlers a chance to prove the negative, if they are prepared to do so.

"RUBBER-LIKE GUMS."

FROM time to time the daily press rings with the discovery of a new and unsuspected source of crude rubber. Some plant, shrub, or vine that had hitherto either been a nuisance, or else the product of such sterile soil that its presence was ungrudged, is found to contain a "rubber-like gum." At once a means of separating this shrub from its presumably valuable contents is devised and protected by an indulgent government. And then—and then—well, the promoters may believe that those who put in the money will reap rich rewards. They may be absolutely honest in securing money to prove their position commercially, but each of these projects is received by the sane sense of the trade at large with the greatest distrust. Of course that proves nothing, although in ninety-nine cases out of a hundred, that same estimate turns out to be correct.

When the milkweed (*Asclepias Cornuti*) was to prove such a remunerative product because of its rubber and its fiber, it was the scientific men of Canada who were the believers, while the more ignorant rubber manufacturer and importer was a profound skeptic. That was years ago and still we hear of no quotations for *Asclepias* rubber.

Later the "guayule" plant was pulled from its alkaline bed in Mexico and forced into notice. Again and again it came to the front. Factories were built in Mexico, machinery was designed in Germany, promoters tried to buy up all the uplands on which it grew—with other people's money—yet to-day we have no guayule rubber.

And now comes the *Picradenia floribunda utilis*, the Colorado "rubber plant." Is it to be like the others? Are we to have Colorado rubber? Is the day at hand when our market reports will quote "*Picradenia fine*," "*floribunda medium*," and "*utilis coarse*?"

THE "NORTHERN SECURITIES" DECISION.

THE more or less superfluous assurance of the attorney general of the United States, that the government has no intention of "running amuck" in its prosecution of trusts was not required to convince those interested in the two great India-rubber organizations, the United States Rubber Co. and the Rubber Goods Manufacturing Co. that their properties were in no immediate danger of molestation. The decision of the United States supreme court, adverse to the Northern Securities Co., which practically declares that a holding company is illegal, has, of course, created an enormous amount of talk and speculation as to the extent of its application. Without attempting to go into the extent of the decision and its points, it is sufficient for those interested in India-rubber to say that there seems no warrant for any belief that even by an exaggerated construction could any of the principles laid down be made applicable to the rubber companies.

This action was brought and the decision rendered under the Sherman act of 1890—known as the anti-trust law—which prohibits unlawful combinations to the detriment of free commerce between the states. It is almost,

therefore, of the nature of things that a corporation to come within the provisions of this law must be of a public, or a semi public character. A common carrier, like a railroad or an express company, doing business in many states, cannot be permitted to form combinations to the destruction of competition or the control of rates. While those who are enthusiastic over the decision are now proclaiming that it means the prevention of such combinations as the meat trust, the steel trust, and the oil trust, this view is not borne out by the decision itself, and, even if it were, it would require considerable stretching to extend the same ruling to India-rubber.

There is no hypothesis that can make the ownership of a number of rubber shoe factories by the United States Rubber Co. "an interference with free traffic between the states." The rubber shoe business, and the rubber tire business, or the hose business are not public in their character. The goods manufactured can hardly be regarded as among the necessities of life. The cases are, therefore, not similar, the conditions are unlike, and even if the government were inclined to "run amuck" against all combinations, which the attorney general assumes is not the case, it is hardly within the reach of imagination to believe that any course would attempt to make the Sherman law applicable to India-rubber.

EVERY NOW AND THEN the question of "synthetic" rubber comes up, and indeed is quite a "bugaboo," particularly to those interested in rubber planting. Of course, the average manufacturer would be perfectly willing for it to appear, particularly while the prices of crude gum are as high as they are at present. As for the importers, they apparently do not care either way as they have confidence that when the rubber millennium comes that they will be able to get their share of business whether they supply gum from nature's laboratory or man's. As a matter of good business, is not the time ripe for some live insurance company to issue a line of policies to timid planters and producers insuring them against the disaster to their interest which they fear? Quite a business ought to be done in this line and the profits would be in proportion to the size of the premiums paid. Further than this, it is very doubtful if such an insurance company would ever be called upon to pay a single loss.

THERE ARE MANY COMPLAINTS OF LATE to the effect that Pontianak gum is not nearly as good as it used to be. No doubt there are some who will say that it never was good for anything anyhow, but in spite of this it has its use, and a very large one. The trouble with the gum seems to be that the native gatherers, in the process of coagulation, add an earthy material, and that they are adding too much. If manufacturers and importers would refuse to receive the gum containing over a certain percentage of the adulterant, the evil would be stopped in time, for once the native gatherers find that they have no market for an inferior material they are likely to bring in something better.

WITH the beginning of the dry season, say January next, there are a number of *Castilloa* plantations in Mexico that should and doubtless will send cultivated rubber to market. However prepared it will sell.

AN INCONGRUOUS SITUATION.

TO THE EDITOR OF THE INDIA RUBBER WORLD: When one studies the crude rubber situation in all its phases it develops an amount of incongruity that would be absurd were it not so serious. In the mechanical goods business, for example, customers are retrenching and buying less and making a bitter fight for lower prices, while the manufacturer is paying excessively both for cotton fabrics and crude rubber. This might continue were the demand for rubber increasing, or even if it were to continue as it has been during the past winter. Such, however, is not the case. At least twenty of the great mechanical concerns in America have rubber on hand sufficient to allow them to fill orders up to the arrival of the new crop. Further than this, the rubber shoe season is over, and one of the largest buyers of crude in the American market will shortly cease to be an active factor. Further still is the unquestioned fact that the general German trade is only fairly good, while that of England is going through a period of dullness. Added to all this, the fact that the high prices will stimulate rubber production the world over, it would seem as if a prediction for lower prices might now be safely made, if ever. Frankly, there is no shadow of equity to-day between the price of crude rubber and the demand for it, and shrewd buyers are waiting to hear "something drop." The argument to the high price believer, treated with a bit of *reductio ad absurdum*, should be—

Rubber is bound to be higher:

Because, the shoe season being over, the United States Rubber Co. and all of the other shoe companies will stop buying rubber.

Because, more than twenty of the leading mechanical rubber companies have stocks large enough to last until August.

Because, sales of mechanical rubber goods show a falling off of about 15 per cent. over last season.

Because, the rubber business in Germany is barely normal and that in England is dull.

Because, the past high prices will, as they always have, bring in quantities of extra rubber from all known sources.

Therefore, say some, rubber will stay high and go higher.

Sensible, isn't it?

D. C.

March 20, 1904.

A CARD FROM THE HYDE RUBBER WORKS.

TO THE EDITOR OF THE INDIA RUBBER WORLD: We notice an account in the press of an action by the Dunlop Rubber Co. against the "Hyde Rubber Co." of Hyde. As we have received numerous communications from our customers on the subject we should be obliged if you will kindly give publicity to the fact that we have no connection with this concern.

It may be of interest to state that in November of last year we obtained an injunction against Walter Cheetham, trading as the Hyde Rubber Co., to restrain him from carrying on business under that name, or of advertising for sale any tire under the title "Woodley" tire. Yours faithfully,

THE HYDE RUBBER WORKS LIMITED.

Woodley near Stockport [England], February 29, 1904.

[THE action above referred to related to an alleged infringement of tire patents owned by the Dunlop company. In the King's Bench division of the High Court, Mr. Justice Buckley, on February 25, granted an injunction to restrain the defendant company from making pneumatic tire covers with four thicknesses of cord in the edge, instead of wires as used in the Dunlop-Welch attachment.]

DEATH OF WILLIAM R. GRACE.

WILLIAM R. GRACE, founder and head of the house of W. R. Grace & Co., of New York, Lima, and Valparaiso, died at his residence in the first named city on March 21, never having rallied from an attack of pneumonia he suffered last December. Mr. Grace had been prominent commercially and politically in New York for forty years. In addition to building up the business which made him a very wealthy man, he twice filled the office of mayor of New York, while his activity in political affairs gave him an influence even in the national campaigns of the Democratic party, with which he was affiliated. He first arrived in New York in 1846, a runaway lad of 14, though his family, in County Cork, Ireland, were people of position and substance, and began life here as an errand boy in a small shop. His first career in New York was brief and uneventful, but later he returned to the city and established an important business which resulted in his leaving a fortune estimated at many of dollars. He was, at one time, the most extensive importer of India-rubber into the United States.

About 1850 Mr. Grace visited the west coast of South America where, at Callao, Peru, he found employment with the firm of John Bryce & Co., ship chandlers, afterwards becoming a partner in the firm, which still later became Grace & Co. with branches at Lima and Valparaiso. This firm did a general shipping and trading business and was enormously successful. It was in 1865 that Mr. Grace returned to New York and founded the house that bears his name. Branch houses were established in San Francisco and Brazil, in addition to the establishments already successful on the west coast of South America.

From the beginning, the importation of rubber was one of the most important items in the business of the new firm, and this grew, as the rubber business developed, and as Mr. Grace reached further and further into South America. From the early seventies until 1886, when W. R. Grace & Co. began to draw out of the rubber business, by far the greater portion of the crude rubber coming into New York came to that firm. It is estimated by a surviving member of the firm that at least 75 per cent. of the South American rubber imported between 1880 and 1886 was consigned to W. R. Grace & Co. "We frequently imported," said this informant, "from \$8,000,000 to \$10,000,000 worth of rubber per year, and I remember that in 1885 we received \$844,000 worth of rubber from Pará on one ship."

The rubber business of the concern became so important that in 1882 Mr. Grace sent Richard F. Sears—a man who had begun with the firm as an office boy and worked himself up to an important position—to Pará, who there established a branch house under the name of R. F. Sears & Co. This house did a large business and it was followed in 1883 by a similar branch at Manáos, the necessity of being represented further up the river having been made apparent. For this purpose J. Alvin

Scott, another employé of the New York office, was sent out and the new firm was called Scott & Co. In a year or two, when it became necessary for Mr. Scott to leave the climate of the upper Amazon, the name of this branch was changed to the Manáos Trading Co.

About this time much of the South American business of W. R. Grace & Co. and almost all of its rubber business was under the immediate direction of Charles R. Flint, who was then a member of the firm, having an interest in all of its South American branches. Mr. Flint's connection with the firm was interesting. He entered the office in a minor capacity in 1871, and speedily rose to the position of bookkeeper. While in this position he did something one day which displeased Mr. Grace, and was discharged. Through the persuasion of Mrs. Grace, who knew Mrs. Flint, and the influence of young Flint's father,

who was a friend of Mr. Grace, he was taken back as bookkeeper. Later he became a buyer and an assistant manager, and then investing some money in the firm became a partner and acquired an interest in the Chilean and Peruvian branches. After 1880 these branches prospered exceedingly, and when Mr. Flint drew out of the firm, in 1886, he was a rich man. In fact, he received for his interest \$1,000,000.

Mr. Flint's withdrawal and the establishment of the firm of Flint & Co. was practically the ending of the prominence of Mr. Grace in the rubber business. Mr. Flint withdrew for the purpose of taking over the rubber business of the firm, and while W. R. Grace & Co. continued to import in considerable quantities up to 1888, it taking that long to get their business transferred, it has been almost entirely out of the trade ever since. With the firm of Flint & Co., Mr. Grace never had any connection,



THE LATE WILLIAM R. GRACE.

nor had he any other connection with the rubber business after the transfer was made.

The withdrawal of the firm from the rubber business necessitated the liquidation of the firms of R. F. Sears & Co., at Pará, and the Manáos Trading Co., at Manáos, as branches of the firm of W. R. Grace & Co., and this was done as soon as their business could be transferred to the representatives of the firm of Flint & Co.

During his enormous transactions in the rubber trade, Mr. Grace was almost universally successful, and an important part of his fortune was due to it. He early recognized the growing importance of rubber to the industrial world, and he did everything in his power at all times to stimulate the South Americans to extend their gathering operations. He recognized further that the more rubber that was gathered and marketed in the United States the greater would be the demands and ability to pay of the South Americans for our goods. Mr. Grace could be correctly classed as the first great promoter and encourager of the rubber importing business in the United States. His houses will be continued for the present by his brothers and sons.

RUBBER PLANTING IN CEYLON AND THE MALAY STATES.

As Seen by The Editor of "The India Rubber World."

FIRST LETTER.

Crossing the Atlantic.—English Manufacturers and Ceylon Rubber.—On Board the *Himalaya*.—Stromboli.—Port Said and the Suez Canal.—The Red Sea and Aden.—Beautiful Ceylon.—At the Galle Face Hotel.—Singalese, Tamils and Chinese.—Quaint Customs.—Director Willis, of Peredeniya and Heneratgoda.—The Oldest Plantations of *Hevea*.—In a Bullock "Hackery" to Heneratgoda Gardens.

TO those who are interested as to why I chose the Leyland liner *Devonian* to carry me across the Atlantic at the beginning of my journey toward the Far East, I beg to explain that she is a big, roomy, seaworthy craft of 11,000 tons, that there were only six passengers all told, and although she carried some 800 cattle, they did not appear on deck, or at table, nor would one have dreamed of their existence, once they were driven aboard. The ten days that were occupied in crossing, spent chiefly on the promenade deck playing quoits with the ship's doctor, put me in fine trim for the brief view of Liverpool and London that I had before the alleged *train de luxe* bore me to Marseilles, to join the P. and O. steamship, the *Himalaya*. My stop in England was only long enough to allow me to see a few of the leading rubber manufacturers, and get their ideas as to the value of the new Pará rubber that Ceylon planters are sending to that market.

One who has probably used as much of this rubber, or more than any other, summarized his experience as follows: "It shrinks on an average about 1.4 per cent. I use it successfully in all grades of fine work, including cut sheet, but do not like it for cements. It stands all tests after vulcanization—compression, stretch and return, oils, etc., just as well as fine Pará, and is perfectly satisfactory."

Another detailed the results of his own experiments thus: "This is a general summing up of the practical results, obtained from approximately 2 tons, from about 20 different plantations. The irregularity in quality is very great, varying from tough elastic gum, apparently equal to Manãos Pará, to soft sticky, short rubber, with little more elasticity than recovered rubber. This irregularity I find in all the forms of pancakes, whether thick or thin, translucent or opaque, except so far those which have been smoked; which, whether owing to the smoke or some other reason, have in the lots (from 3 separate plantations) which I have tested, proved even in quality throughout. I have been favored by one plantation with unsmoked samples (separately treated and marked) from 18 year old trees, and from young 5 year old trees. Each of these samples proved regular throughout, but the quality was very different, that from the old trees being tough and very elastic, while that from the young trees was soft and green. It appears to me, therefore, probable that the irregularity I have noted in the quality of shipments may arise from the varying ages of the trees, and that until the trees have reached absolute maturity, the *latex* of one season's planting should not be mixed with that of younger or older trees, but that each year should stand on its own merits to attain regularity in quality. The smoked samples may have come from old trees only, and the smoke perhaps had nothing to do with the quality. This want of regularity utterly shuts out Ceylon rubber from fine work, such as thread, cut sheet, bladders, etc., and as the strength of a chain is but that of its weakest link, it cannot at present for general work be classed higher than the good mediums. For

the special purpose of making cement, however, it has found a place for itself on account of its extreme cleanliness, and the very convenient form of the pancakes in which it is shipped, practically ready for the naphtha bath. I believe in a great future for rubber planting, properly carried out. It might be done by the government forest department, and the trees rented when old enough."

Thus the only "out" about the rubber from the viewpoint of the user seemed to be the presence of immature, or partly cured gum, something to be expected when the fact is remembered that the plantations are young and the planters without long experience in gathering or preparing for market. The added fact that about 40,000 pounds are expected from the East this year, and that it readily brings the highest price in the market, led me to believe that I had before me a most interesting series of plantation visits once I should reach Ceylon and the Federated Malay States.

As I said, therefore, I took train to Dover, crossed the channel, landed at Calais (so called from the way they handle one's luggage), shivered all the night in the absurd little French *train de luxe*, and finally, arriving at Marseilles, stepped aboard the steamer that was to be my home for nearly three weeks. In due course we left the granite quays, the shipping, and the splendid limestone cliffs of the French port behind, and settled down to the Mediterranean trip. We passed through the straits of Bonifacio in the night, so that I had no chance to observe, or photograph, and the next morning were out of sight of land. The day following we all started in to get acquainted. I was the only American aboard, the major part being English people who had interests in India, Ceylon, or Australia, and some even were going beyond to Hongkong and Yokohama.

I had thought to do some writing on this voyage, but some kindly soul put me on the "amusements committee," and what with tournaments for deck quoits, cricket, ball, needle and cigarette races, etc., not to speak of two concerts, my time was pretty well taken up. My revenge came with the concerts, however. I made a speech at each, relating various well known American stories as personal experiences, and they were most enthusiastically received. As the British are firmly convinced that all Americans are speech makers, it is well for those who propose to travel with them to prepare to be called upon.

On the night of November 21 we had a splendid view of the volcano of Stromboli, which gave us a veritable special exhibition. The night was moonless, and the sea as smooth as glass. About 9 o'clock we caught the first red glow of the crater, and two hours later were near enough to dimly discern the outline of the cone shaped island mountain, and to see plainly the red lava torrents that tumbled down its sides and were quenched in the sea. We all staid up until the island was lost to sight, and left the deck only when a faint reflection on the gathering clouds was all there was left to us of one of the most impressive of sights.

We passed the straits of Mycenae so early in the morning that none of us were up, and on Monday saw Crete dimly in the distance. By this time the boat had developed a pretty fair roll, but few were ill, and the deck games went on—that is, for the men. On Tuesday noon we were behind the breakwater at Port Said and surrounded by coaling scows, crowded by

dirty Arabs who did the coaling with baskets. As the air was full of coal dust, a half dozen of us secured a boat and went ashore, spending the afternoon in roaming the sandy streets, followed by a crowd of beggars, jugglers, pox-pitted street vendors, sellers of indecorous photographs, and all of the riff raff of the nastiest of all the cities of the Orient.

Port Said is built on soil chiefly sand that was dumped there during the excavation of the canal. It is a busy bustling place, due to the constant arrival and departure of steamers. It has a fair harbor made by two breakwaters that extend out into the shallows, one 7000 feet, the other 6000 feet.

We expected to get away early the next morning, but the mail from Brindisi being late, it was 4 o'clock in the afternoon before we entered the canal. According to rules, we steamed at four miles an hour, tying up to the bank when another boat was met. As we passed by three during the night, this occasioned quite a delay. It was quite cool, and a light overcoat was



IN THE SUEZ CANAL.

necessary after the sun set, but we did not stay long on deck as both sand flies and mosquitoes were quite abundant.

In the light of our own American canal projects, it is interesting to remember that the Suez plan was entertained and dismissed as impracticable by Napoleon I, who was advised by his engineers that the Red sea was 33 feet higher than the Mediterranean, and later when M. de Lesseps had proved that the difference in levels was but six inches, such an eminent authority as Robert Stephenson declared the plan to be commercially unsound. There was also a rival plan brought out for a 250 mile canal from Alexandria to Suez. Nevertheless the great work was completed. It is 100 miles long, only about one-quarter of it being artificially made, the rest traversing natural lakes such as Bitter Lake and Lake Timsah. The plan of the canal was for a depth of 26 feet, the bottom of the ditch being 72 feet wide and the top about 300 feet. This was carried out in places, but where the digging was especially hard it is somewhat narrower. The canal shows a slight current, and slowly though the boats go through it, there is a constant crumbling of the sandy banks so that a force of steam dredgers are employed keep-

ing the channel clear, nor is this work allowed to flag for an hour.

The next morning we were still hemmed in by sandy banks and the scenery was not inspiring, being varied only by an occasional station about which clustered a few lebec trees, the big dredges and an occasional native boat with its huge yards and dingy sail. Passing both the old and the modern cities of Suez, we left the canal, and were in the gulf of Suez. Here the water was of a marvelous blue, the sun brilliant, and the far off, lofty sand dunes, scored and seamed by wind and rain, showed wonderful effects in yellow, brown, violet, and purple. Here we began to get the warm weather. With Asia on our left, Africa on our right, and both in sight, a smooth sea and blazing sun, white flannel and duck suits soon appeared, the *punkahs* were started in the dining saloon, and the whole of the deck shaded by both top and side awnings. Wind scoops were also placed in the open ports, and we felt at last that we were in the tropics.

The next point of interest to be noted was the Daedelus shoal, from which our Captain Broun once rescued 180 souls, who, escaping from the wreck of their vessel, were gathered in a shivering crowd waist deep in water.

We had a further evidence of the genuineness of the hot weather the next morning at 3 o'clock, when the order came to close the ports as the water was slopping into the cabins. How most of them stood it I don't know, but I took a blanket and went on deck, and even then it was stifling. At daybreak we passed the "twelve apostles," a dozen big rocks rising abruptly from the sea, a grim weather beaten row. It was near here that the Turkish government, after much pressure, erected fine light-houses furnished with the latest illuminating devices, but after keeping them lit for two weeks, the lights went out and not a glimmer have they shown since. As navigation is a bit perilous hereabouts, and mariners need the lights, it is just as well perhaps that I did not make careful note of the quartermaster's opinion of the unspeakable Turk, given as he told me the story.

The days were now long, hot, and a bit monotonous. Shut out as we were on the promenade decks by canvas walls, the peeps that we got at the sea showed a glare of light that was almost unbearable. The only relief was when a sudden drenching shower obscured the sun and we saw mountainous islands, distant peaks, and still more distant ranges. We saw however, the



PORT SAID WATER FRONT.



THE AMUSEMENTS COMMITTEE.
ON H. M. S. "HIMALAYA."

volcanic island Jebel Tair, and later Mocha, Mt. Sinai having been passed in the night. Then with a glorious setting of the sun over Somaliland, we passed through the straits of Bab-el-Mandeb, by the barren island Perim, and the next morning cast anchor in the harbor at Aden.

It must have been 2 o'clock in the morning when I awoke and found that we were at anchor. The sound that brought me to a sense of my surroundings, and the insufferable heat of the cabin, was the chanting of a gang of coolies who were warping a huge freight scow up to our steamer. Their song was the iteration of two phrases that sounded like "Esco darn ye! Perri go darn ye!" with each "darn" they all gave a pull. Beside this, there was a constant chatter from a half hundred boatmen that drove me on deck, where wrapped in a rug, and lying in the scuppers, I got a few more winks. Aden is as uninteresting as it is unhealthy. It is well called "the white man's grave," as hundreds lie buried on its rocky slopes.

It is built on a flat sandy treeless plain, hemmed in by hills arid and barren to the last degree. It rains here regularly once in three years, and the water is stored in huge tanks five miles away up in the hills. Anyone who wishes to enjoy a long cool drink, and then another, should seek this thirstiest of all thirsty spots. It was here that the passengers whose destination was India were transferred to another steamer. And sorry we were to have them go, for many friendships had been formed that were of the sort that should continue.

Here left too, a young man who had not only been my partner at deck quoits, but who had given me much information about America. Shall I ever forget the evening, just after our excellent course dinner, when he said to me, with the kindest of intonations:

"Don't you miss the sweets [candy] between the courses?"

"What sweets?" was my bewildered query.

"Why, you know in America, at a course dinner, they serve

sweets after the soup, and the fish, and the entree, and right through the dinner."

I had no vivid remembrance of that custom myself, but his faith in the exactness of his information was so great that it would have been a sin to upset it, so I agreed that I was pining for chocolate creams after the consommé, and molasses candy as a chaser for the fish, and it made him my friend for life, for which I am exceeding glad, as in spite of that one absurd idea, he was one of the finest chaps I ever met.

Speaking of the people one meets in distant lands, it is sad to say that one's own countrymen are often the biggest freaks. I met one of the freak sort later. He had not been in the smoking room ten minutes before he had told his whole history, and got every Briton and European there white hot by his comparisons, invidious and startling. In the midst of it I was pointed out to him as a fellow countryman, and he tried to get me into the fight, but I balked. Then he started in to impress me with his importance:

"I come from God's country," he said, "but I've been all over everywhere. I used to be consul at A—. I lecture, too. When I was consul at A— I often used to go aboard a man-of-war and lecture, sometimes for two or three hours, and I always got seven guns; what do you think of that?"

"Mighty poor shooting, so far, but they will get you some day," I said with conviction.

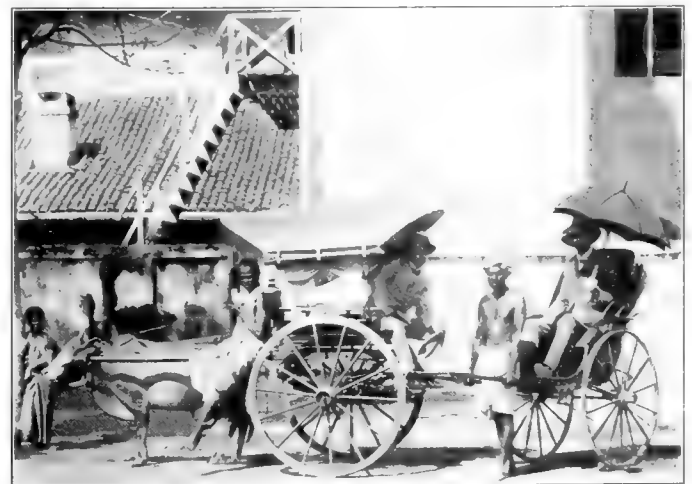
After leaving Aden I was able to secure an upper deck cabin, which was much cooler than those either on the main or spar decks. Now that we were in the Indian ocean the sea grew much smoother, and early in the morning, after a salt water bath, the men promenaded the deck in pajamas until 8 o'clock, after which ordinary clothes were required.

We now began to feel the breath of the monsoon, while the water took on an even bluer blue, and flying fish in shoals fled to right and left

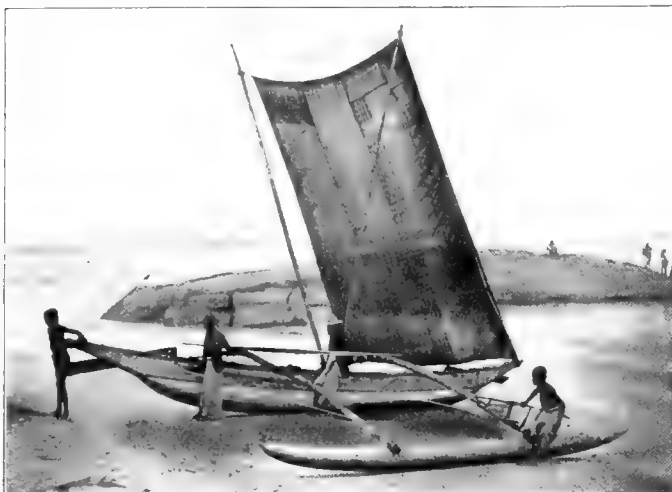
from the onrushing ship. The heaviest sort of showers also began to come with more or less regularity, the ship's officers came out in white duck suits, prawn, fish, and other currys appeared at dinner, and we *knew* that we were in the tropics.



BREAKWATER AT COLOMBO, CEYLON.



BULLOCK HACKERY AND RICKSHAW, COLOMBO.



CATAMARAN WITH SAIL, CEYLON.

On the evening of December 5 we sighted Minecoi island, a low lying circular bit of land crowded with graceful cocoanut palms, and a well known copra producing place. On the day following, at 1.15 in the morning, we passed behind the great breakwater and dropped anchor in Colombo harbor, in the midst of a great fleet of passenger and tramp steamers of all nations, native boats, lighters, etc. Most of the men aboard were on deck, although pajama clad, and as the coaling was soon to begin, I went ashore, passed the little black customs inspector without difficulty, and, getting in a jinrikisha, was soon at the Galle Face Hotel and sound asleep in a big wide bed that seemed delightfully steady when contrasted with even the comfortable berths of the *Himalaya*.

It may perhaps be well just here to refresh the reader's knowledge of Ceylon with the following facts. The island lies south of India proper, and is 271 miles long and 137 miles broad, and contains about 24,700 square miles. It has under cultivation, or used for pasture, some 3,500,000 acres—more than a fourth of its area. Of this about 520,000 acres are devoted to rice and other grains, the next largest planting being tea, of which there are about 400,000 acres. Other important products are cocoanuts, spices, coffee, sugar, cacao, tobacco, essential oil grasses, etc.

The population of the island is about 3,500,000, of which less than 10,000 are Europeans. The majority of the natives are Singalese, of whom there are over 2,000,000, the other races being Tamils (of whom there are nearly a million), Burghers, Eurasians, Moors, Malays, Veddahs (aborigines), and so on.

The island has an excellent government of the paternal sort, administered by a governor who is appointed by the king of England. He is assisted by an executive council of five, but has power to overrule their advice. There is also a legislative council of nine, including members of the executive, and together with eight unofficials appointed by the governor, representing the mercantile and planting interests and the native communities.

The island became a British possession in 1795. Prior to this the Dutch, who had held it for 138 years, had wrested it from the Portuguese, who ruled it for 141 years. Interesting reminders of both of these conquests are found in the high sounding Portuguese names that many of the Singalese bear, and in the Burgher types which remain quite Dutch both in name and appearance.

Neither the Dutch nor the Portuguese had ever conquered the whole of the island, which was accomplished by the British in 1815. Since then there have been a few rebellions, which, however, were easily suppressed. During the last one, in 1848, some 2000 up country Singalese were put to flight by 30 Malays who wore the British uniforms, a proof that the ancient warlike spirit of the Kandians is practically extinct.

My first task after I was comfortably settled at the Galle Face was to buy a sun helmet, or *topee*, which I was lucky enough to find in one of the native stores that occupy the ground floor of the hotel. There are two dangers against which visitors to this part of the world must guard most carefully; one is exposure to the sun, and the other a sudden chill. In no part of the world, if reports are true, is the sun so deadly as here, but the danger may be reduced to a minimum if one will only listen to the advice of the older residents, and take reasonable precautions. A pith sun helmet is indispensable, as straw or felt hats are sources of danger, and a cap is worst of all. In addition, one should at first carry an umbrella as well. Nor is the danger present only at midday, or when there are no clouds. It is practically as bad at 7 in the morning, and when the sky is wholly covered with clouds. The whole habits of the dwellers here—that is, the Europeans, speak of this danger. Men and women wear sun helmets and carry sun umbrellas, while broad verandahs and close lattices guard the houses. Even the railway carriages have, in addition to curtains, visor like projections to keep out the searching rays of Old Sol. There have been cases even of sunstroke through the eyes, from the intense glare reflected from white roads or from the water, while a single shaft of sunlight, entering a crevice in a shutter, and falling on a man's temple, has been known to result fatally.



STREET SCENE IN COLOMBO.



BANYAN TREE, CEYLON.

Where the heat is so great, it seems almost absurd to talk of chills, but when the sun goes down, and it still remains so hot that collars wilt, and the whole body is wet with perspiration, there comes that danger. The breath of the northeast monsoon, the regular wind of the winter months, while not cold, has brought on many a fatal chill, and resulted in fever and death. Hence most of the Europeans wear flannel bands about the abdomen (cholera belts they are called), and are very careful not to sleep in a draught, or to cool off too suddenly when very warm.

The natives, on the other hand, seem to be almost invulnerable both to the sun and to the "soon." They go about bareheaded, and almost barebodied, and sleep when and where they will, and rarely suffer from such exposure.

Equipped though I was to stand the heat, I was not proof against surprise, nor the delight that I felt when I saw standing in the hotel lobby my good friend, Henry M. Rogers, of Boston, one of the directors of the Revere Rubber Co. He did not see me, and as my sun helmet would be a sort of disguise, I went up to him, and said:

"Do you wish a guide, sir?"

"No, I thank you," he responded politely.

"But you do!" I insisted; "You are lost now, and don't suspect it. I will not only guide you for nothing, but be glad to pay for the privilege."

I saw a gleam of recognition come into his eyes, as he said: "My dear boy, the rubber trade of the United States sent me over here to watch over and guide you. It is you who are lost, and I am delighted to find you."

Then we had a love feast, and instead of feeling far from home, kindred, and friends, it seemed as if the miles between Ceylon and the States were few, and most easily annihilated. At the same time, it did seem a bit unusual that we two, starting from the same city, and circling the globe in opposite directions, without any knowledge of the other's absence from home, should meet as we did. It was also very jolly.

After proving to a score of Mohammedan merchants who haunt the hotel that I desired to buy no jewelry, silks, curios, or unset stones, and threatening the native tailor and shoemaker with my umbrella, I had a chance to look about. The hotel is beautifully situated on the seashore, its courtyard crowded with cocoanut palms, its broad verandahs, latticed blinds, and high ceilings making it as cool as one could expect in so torrid a clime. It was impossible for me to communicate with any of the planters that day, so I gave myself up to the



PLANTAINS, CEYLON.

pleasant task of watching the strange people that surrounded me. For example, a Hindu juggler, with the inevitable native flute, and basket of cobras, invited me out upon the lawn to view his magic. I thought it worth a rupee to see the "mango trick" and was not able to detect any fraud in the sleight of hand by which he apparently planted the seed, made it sprout, and within two or three minutes grew a pretty shrub more than two feet high. By encouraging a rival of his, I also saw a lively little mongoose attack and kill a huge ratsnake, but no inducement was effective in getting him to trust his cobra within reach of its traditional enemy.

Just as the exhibition ended, along came a steamer friend, with the information that he had engaged a gharry to take us out to Mount Lavinia, a favorite shore house some three miles away. As it promised to give me a view of the country I gladly consented, and we were soon bowling along over the fine roads, drawn by a very diminutive but energetic pony. On the way we stopped at a Buddhist temple, and, under the guidance of a priest who spoke excellent English, saw the great image of Buddha, in the forehead of which is set a sapphire as big as a teacup, which glows and sparkles with a most uncanny luster when the room is darkened.

We also saw the small temple, where securely sealed forever from human sight are the sacred books engraved on plates of gold and silver. The doors to this little building, by the way, were walled up some 1100 years ago. As a special favor, the priest showed us a footprint of the god in solid rock. To my mind it didn't do Bud justice, as the pedal extremity was exceeding flat, and the toes looked as if they might have been whittled out of soft pine by a very poor whittler. The size of the foot, however, was all that could be desired by any believer.

He also showed us a series of striking pictures, illustrating the various types of torture in the hereafter for those who killed any living thing here on earth, even to the insects that make the fine toothed comb a necessity. I was surprised to find among them special tortures for those who fish and hunt.

In the temple enclosure we were at peace, but once outside a half hundred beggars, big and little, crowded about us, following closely down the narrow lane towards our carriage. I was afraid some of them would give me of their various skin diseases, so I hired the priest for a rupee to keep them all at a distance until we were on our way out, which he did.

The drive to Mount Lavinia was so full of novel scenes that it is almost impossible to select even a few that are typical. Through the narrow streets, crowded with native houses, from

which swarmed half clad men and women, and nude children—meeting Tamils, Singalese, Chinese, Moors—indeed, all types of black and yellow men, turning out for carriages of all sorts, jinrikishas, bullock hackeries, and huge two wheeled thatched-roof wains; getting a glimpse of a rare tropical garden, then of



NATIVE METHOD OF TREE CLIMBING.

until we drew up at the little hotel—crowned height of Mt. Lavinia. Here we had tiffin, with coffee, out on the lawn under an umbrella like tent, where we lay in reclining chairs and watched the sapphire sea studded with native fishing boats, their huge brown sails swelling with the breath of the northeast monsoon. It was scorching hot in the sun, so we waited until late in the afternoon, and drove slowly back to the hotel.

I was awakened early next morning by my black Tamil bedroom man, who brought coffee and bread and fruit, and informed me that "Master's" bath was ready. As I pulled the mosquito curtains aside, and got slowly out of bed, I was startled by a flapping of wings, and a very black and impudent crow alighted on the window sill, his eye on the tray of food, and waited impatiently for me to go to the bathroom. On the tiled roof opposite were half a hundred more, awaiting the results of his investigation, so I took my coffee then and there. On my return not a crumb of food remained, much to the disgust of a couple of sparrows who were investigating my belongings with all sorts of profane comments. They left, however, when the lizard began to sing, and I didn't blame them, for however common and useful the house lizard is in Ceylon, and even if it can catch more flies and mosquitoes than anything else, its song is not real music, and if you try to stop it, by throwing a boot, the tail drops off, greatly injuring its looks.

Very early in the day I was introduced by my request to the *dhoby* man, who is the washerwoman of the East. He takes one's clothing out to the nearest stream, wades into the water, and pounds the dirt out on the rocks, then partially dries and irons them. He also has a habit of infesting them with a parasite which results in the "dhobies' itch." I had a mixture of starch, boric acid, and powdered zinc, which I desired to try on this parasite, and although I told him when he took the contract to be sure to give me my money's worth of germs, I didn't get one, and I am sure he had some, for he was always scratching. I fancy he delivered mine to the chap who had the room next to me, for I used to hear him scratching and "saying things" when night had fallen, and the "spicy breezes blew soft o'er Ceylon's isle."

The next morning I called on Mr. Ferguson, of the *Tropical Agriculturist*, who for many years has been a high authority on tropical planting. To my regret he was absent, being then in the United States, and, his nephew informed me, likely to call at my New York office at any time. I learned, however, that

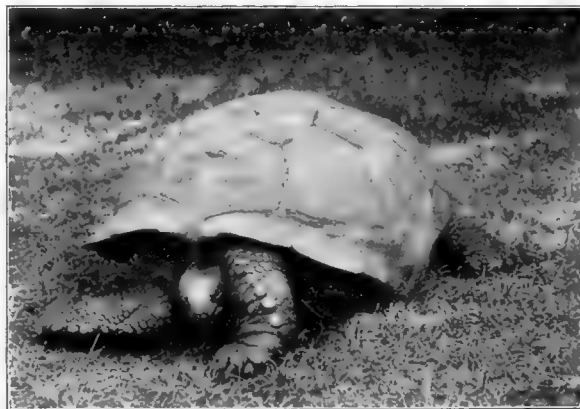
Director J. C. Willis, F. L. S., of the Royal Botanical Gardens, Peradeniya, was then in town, and at the hotel familiarly known as the "G. O. H.," meaning the Grand Oriental Hotel, where I found him, and was able to secure his assistance in planning my visit to the typical *Hevea* plantations.

Prior to my visits to the plantations, in talking to those who were supposed to know about rubber plantations, there was a great unanimity of opinion as to the profits shown. One man, not an optimist either, said that in two cases he knew of, the first year's tapping had paid for the whole of the original investment, and that the second year's production had shown a profit of 120 per cent. He was not quite sure of the age of the trees when first tapped, but said they were certainly not ten years old.

He said that when the planters had in view any new product that looked pretty good, the natives always planted a little of it, so that when harvest time came, they could secure a little from their own plantation, which, added to what they were able to steal from the white planters, often made a very good showing. That they were already planting the *Hevea* in a small way, and would doubtless later do more or less night tapping on the plantations of the white men. Of course once they have the rubber, it is impossible to prove title to it.

In chatting with Director Willis, it was easy to see that he was enormously interested in the success of the *Hevea* experiments in Ceylon, and indeed in the whole of the East and doing much to further them. That the whole of the tropical world in the East was fully alive to the opportunity that rubber offers, he acknowledged. The botanic gardens at Peradeniya, and the plantations as well, are constantly receiving visitors from Java, Sumatra, French Indo China, Siam, and similar countries, who are investigating the subject, and often trying to contract for seed on the spot.

As the oldest planting of *Hevea* rubber in the island is at Heneratgoda gardens, which is one of the government gardens, under the direct charge of Mr. Willis, he thought that my plan to go there first was a good one, and at once gave me a letter to the contractor in charge, Mr. William Perira.



ONE OF THE ABORIGINES, CEYLON.

On the following morning I therefore had coffee at 4.30, and took a "rickshaw" to the railway station, and ere long was speeding along the seacoast toward my destination. The rising sun disclosed long stretches of swamp and jungle, stretches of sandy shore crowded with cocoanut palms, native villages just awakening, fishing villages where the whole population were engaged in pulling in the nets that had been filling up all night, and in time we reached the railway station at Heneratgoda. Here as I could get neither gharri nor rickshaw, I was obliged to charter a bullock "hackery."

A NEW LAW OF VULCANIZATION.*

WHY one kind of rubber is stronger than another which has the same chemical constitution, why some kinds vulcanize under conditions in which other kinds will not vulcanize, why rubber vulcanizes at all—we do not know. We know the facts, but we do not know the reasons for them. We observe numerous chemical reactions, and from our observations deduce the laws which govern them—that is to say, the circumstances under which they take place. But “the true nature of chemical force or affinity is still a secret to us, as is the nature of the universal force of gravity.” Men of learning in all ages have sought by diligently observing facts to discover the laws of nature. This field is so vast that he must be bold indeed who would seek to penetrate the veil that conceals from us her secrets, or to do more than from observed facts deduce the ways in which nature acts. “The laws of nature are only a summary of observed facts.” “It is the object of chemistry as a science to know the properties of substances and the relations which exist between them.” Why substances have their respective properties, and why those relations exist, it is not the object of chemistry to discover.

Any new theory or process of vulcanization should be tested by a large number of experiments under varying conditions before it can be accepted as valuable. One or two experiments can by no means be sufficient to establish the value of such theory or process. The union of rubber and sulphur is a chemical process and proceeds in accordance with well established rules applicable to chemical processes in general. Such rules are the result of deductions made from a very large number of observations by men of great experience, and have been universally accepted as correct because as yet no exceptions have been found that would impair their value.

These observations seem necessary, as the theory concerning vulcanization which will follow these remarks is believed to be for the first time made public. The facts may possibly be known to some observers, but a careful examination of authorities reveals no reference to them. The theory itself has been tested by a large number of experiments during a great range of vulcanizing temperatures without finding any variation whatever in the rule—which is as follows: *The vulcanizing effect of any particular vulcanizing temperature is the precise complement of the vulcanizing effects of any other vulcanizing temperature, or combination of temperatures.* That is to say, if a rubber compound be submitted to any particular vulcanizing temperature for any proportion of the time required to vulcanize that compound at that temperature, the vulcanization may be completed at any other vulcanizing temperature, if submitted to it for the remaining proportion of the time that may be required at the latter temperature.

Thus if 30 minutes be required to vulcanize the compound at one temperature and 90 minutes at another, the compound will be equally vulcanized, whether it be vulcanized at either of those temperatures in the *required time*, or whether it be submitted $\frac{1}{3}$ of the time required at the one temperature and $\frac{2}{3}$ of the time required at the other temperature, or $\frac{2}{3}$ (or any other percentage) of the time required at the one temperature, and $\frac{1}{3}$ (or the remaining percentage) of the time required at the other. No difference can be perceived in the vulcanization whether it be effected part at one temperature and part at another, or whether it be effected entirely at one temperature.

From this rule it results, that *it matters not to what vulcanizing temperature or combination of vulcanizing temperatures the rubber compound may be submitted, the result will be vulcanization, provided the compound be submitted for a proper length of time.*

Though it is believed that this rule is now made public for the first time, it has been known in effect to the practical rubber manufacturer since the manufacture of vulcanized rubber goods began, for the length of the process has always been adapted to a combination of vulcanizing temperatures whether the steam or the dry heat process was used. This adaptation is necessary. For, as is well known, it is an impossibility to vulcanize by either of these processes on a large scale at fixed temperatures from the beginning to the end of the process. In the laboratory, however, where only small samples are concerned, there is no difficulty in doing so. There has therefore been no difficulty in establishing the correctness of the rule by a large number of laboratory experiments, each of which has proved entirely successful and absolutely in accordance with it.

Formulas are used in the manufacture of vulcanized rubber goods in but two steps of the process—for the compounds, and for the final or curing step. For the compounds, formulas are necessary in order to secure uniformity in the goods, and in order that the finished product may be adapted to the purpose for which it is intended. These formulas are the result of experiment, and when once established are not readily changed by the manufacturer. If they were left to the judgment of the workman who for the time being weighs them for the succeeding steps, inextricable confusion would immediately result. The formulas for compounds must not only be carefully arranged, but they must be exactly followed. This is the one part of the manufacture in which under no circumstances, is there any deviation allowed. Not that compounds cannot be changed, for they are often changed. But this change is made only by the manufacturer himself or by the superintendent as the result of careful experiments. Many a factory has suffered heavy losses by apparently slight changes in the compounds which were thoughtlessly made.

In the final or curing step of the vulcanizing process, formulas are necessary in order to secure uniformity in the results. In the early stages of the manufacture this operation was left somewhat to the judgment of the workman, who based his judgment on an examination of samples withdrawn (in the dry heat process) from the vulcanizing chambers. But in recent years the formulas are not only strictly followed, but recording gages are used for the purpose of enabling the manufacturer to know that the exact prescribed times and temperatures have been followed. Such formulas are arranged with the object of completing the vulcanizing of the goods in the shortest time that will produce the proper results. They may, however, be greatly varied, but such variations cannot be left to the judgment of the operator, except at the expense of uniformity in the result.

The following are examples of formulas that are used in the dry heat process. The first is as follows:

20 minutes from the closing of the vulcanizer until the temperature of the vulcanizing atmosphere reaches.	200° F.
30 minutes to	210° F.
30 minutes to	220° F.
30 minutes to	230° F.
30 minutes to	240° F.
30 minutes to	250° F.

30 minutes to.....	260° F.
90 minutes at.....	260° F.

The second formula, which is more generally used, is for a much slower operation, and is as follows:

30 minutes from the closing of the vulcanizer until the thermometer indicates.....	130° F.
30 minutes to.....	160° F.
30 minutes to.....	180° F.
60 minutes to.....	200° F.
60 minutes to.....	215° F.
60 minutes to.....	230° F.
60 minutes to.....	240° F.
60 minutes to.....	248° F.
60 minutes to.....	255° F.
15 minutes to.....	258° F. or 260° F.

These are the temperatures of the vulcanizing atmosphere—not of the goods themselves.

Each of these formulas is used in the curing of rubber boots and shoes, *and each produces the same vulcanizing effects.* It is safe to say that substantially all the rubber boots and shoes made in the United States are cured according to formulas practically like one of the two given above. As the value of such goods produced in the United States in 1903 was upwards of \$45,000,000 the formulas must be very common and well known.

It is at once apparent even from a casual inspection of the formulas, that each is arranged to produce vulcanization through a combination of temperatures, and also that the two combinations are totally different. In the first the average temperatures are much higher than in the other, and the chief part of the vulcanization must take place while the temperature of the chamber is above 250°. In the second, as the operation ceases as soon as the temperature of 258° or 260° is reached, and as the rate of the union of sulphur and rubber rapidly increases with each increase of temperature and as rapidly decreases with each reduction of temperature, the chief part of the vulcanization must take place below the indicated temperature of 250°. It is probable that the effective temperature would average no higher than 238°, for the same goods are as well vulcanized in 3½ hours at 238° (that being the actual temperature of the rubber) as when vulcanized according to either of the two given formulas.

The fact that the same vulcanizing effects are produced by the use of two totally different formulas, each of which is made up from a combination of many various temperatures, is a confirmation of the law given above in this article, which has been established by direct experiment.

It is important that this law should become generally known among manufacturers, as there is always a possibility of improvement in a product when the laws governing its production are known. Too little attention has been paid in the past to seeking to discover the laws which govern the vulcanization process. Doubtless enough facts are already known from which several other general laws of vulcanization could be deduced if proper pains were taken to collate them. Dr. Weber has been almost the first to seek to generalize facts into laws. But notwithstanding his researches, the field is still large enough for a great deal of investigation. In fact when we consider the great number of different varieties and qualities of rubber and the fact that each of them must have its own proper treatment, the field seems so vast that we wonder if it can ever be fully explored.

The second given formula, in itself, contradicts a notion that prevails to some extent that rubber does not vulcanize below 239°—"the melting point of sulphur." If the bulk of the rubber boots and shoes in this country are vulcanized at an effective temperature lower than 239°, as would appear to be the

case, it is difficult to see on what such a notion could be founded. The fact is that nothing could be further from the truth. It is even probable that the sulphur in a rubber compound does not melt below 248° F., the melting point of prismatic sulphur. But whatever may be the melting point, the fact that the sulphur is melted in the compound has not the slightest effect upon the union of rubber and sulphur. The rate of this union increases with each increase of temperature up to about 310° or 315°, after which the rate decreases, not actually but proportionately. Up to that temperature, the rate of the union increases not in a fixed ratio but in a constantly increasing ratio. When the temperature approaches and passes 239°, there can not be observed the slightest indication of any change in the rate of increase of that ratio. So when the temperature approaches and passes 248° there is not the slightest indication of any change in the rate of increase of the ratio. This statement has been confirmed by the result of a large number of vulcanizations of the same compound under identical conditions both at 238° and 249°, and at various temperatures both just below and just above each of those two points.

NOTE.—In response to many inquiries as to the authorship of this series of articles, we would say that they are from the pen of one of the best known rubber manufacturers in America and are the result of a great variety of experiments that are constantly going on in his works and under his personal supervision.—THE EDITOR.

PROBST'S LIFE SAVING SUIT.

THE life saving apparatus invented by M. Joseph Probst, of Geneva, Switzerland, is one by means of which each man becomes his own life saver.



M. JOSEPH PROBST, OF GENEVA, IN HIS LIFE SAVING SUIT.

That is to say, it is a suit which, in case of disaster, the passenger can immediately don, with the assurance that, no matter how long he may be buffeted on the surface of the waves, he may exist without difficulty until picked up. The inventor has himself fearlessly demonstrated the utility of his invention by remaining in the water for a month, and by means of the food carried in the suit saving himself from starvation. His first experiments were made in the lake of Geneva, when he remained 15 days in the water to the astonishment of the people of the lake city. The costume is made of India-rubber, opens in the center, and is easily put on, and has nothing in its construction to confuse the wearer when trying to adjust the suit in moments of excitement. The legs and feet fit into trousers weighted at the ends, and on the outside are airtight pockets large enough to contain lamps, matches, food stores, a trumpet, and an instrument by means of which the attacks of predatory fish may be repelled. The dress is so buoyant that nearly half of the body remains above water and one can lie down or stand up in it.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

THE interesting paper on asphalt read by Mr. Sutherland before the Faraday Society and made accessible to the rubber trade in a contemporary forms a welcome contribution to the literature of the subject. The composition of certain mixtures or compounds well known in the insulated cable trade is only hinted at darkly, and it is possible that the author did not care to let the public too closely into his confidence. With regard to Callender's Cable Co., it has been generally supposed that they have a monopoly of the the product of the Trinidad pitch lake, from which their "Bitite" is made; on the other hand, it is stated in recent work on the chemistry of India-rubber that the Callender compound is made of stearine pitch, quite a different body. But dealing with the question of monopoly alone, it must be remembered that within quite recent times considerable deposits of bitumen resembling that of Trinidad have been discovered in the northwest of Venezuela, and I understand that they have been conceded to an American company. Pitch occurs in Great Britain only in small quantities, and nowhere else I believe than in the mineral vein of Derbyshire. In mineralogical works this substance is referred to as mineral caoutchouc, a name it hardly deserves, though its elasticity or rather plasticity is by no means inconsiderable. I don't think that it has ever received any practical application, the amount being too small in any one locality to make its collection worth while. There is good reason to suppose that it may have something to do with the occasional outbursts of fire damp in Derbyshire lead mines, but this is a matter which need not be discussed in this place. Besides Derbyshire, this mineral caoutchouc has been found in France and at Woodbury in Connecticut, but it cannot be considered as of more than scientific interest and need not detain us further. Mr. Sutherland thinks that a huge fortune awaits the discoverer of the perfect insulating material; from what I hear of a body known as Rupertite it would seem as if the discovery had been made. This body, the composition of which is known only to three persons, is made and used in one of our cable works as the ideal rubber substitute, not the first time by a long way that such a claim has been put forward.

GENERALLY speaking things are not at all brisk, owing largely to the high price of rubber. The uncertainty of the market induces a Fabian policy on the part of buyers, who are disinclined to go beyond their immediate requirements. This is the slack season for the proofing trade, of which it is difficult to hear optimistic prognostications. Certainly Mandleberg's have declared a 20 per cent. dividend, but then the rainproof department is responsible for this. As regards the legitimate macintosh there does not seem to be anything to chronicle in the way of novelty or development. "With cheap rubber we might go ahead; as it is we can only jog along" is the answer to inquiries after progress. Then follows a series of uncomplimentary remarks on the iniquities of rubber merchants, who are considered primarily responsible for the present unsatisfactory position. As regards the mechanical rubber trade, in the north the continued depression in the cotton industry has undoubtedly proved a setback to business. However, those manufacturers who rely largely on the export trade say that they have nothing to complain of. Activity in naval circles

occasioned by the war in the Far East will doubtless mean increased admiralty orders.

QUITE a jubilant note was struck by Mr. C. T. Kingzett at the recent meeting of the Improved Golf Ball Co., Limited.

THE ELASTINE
GOLF BALL.

This ball, which is of the rubber cored variety, naturally appeals to a large class because of its low price, being retailed at 1 shilling. Judging from what I hear in various districts, Mr. Kingzett's remarks were quite justified, and though of course the price may have a good deal to do with its general use, yet this factor alone cannot be held answerable altogether for the chorus of approval.

IT being quite a long time since I had heard anything of Liberian rubber as an investment, I was interested to see the other day that the name of the company previously known as the West African Gold Concessions has now been changed to that of the Liberian Development Co., Chartered and Limited. While the main object of the company is the exploitation of the mineral wealth said to exist in the country, it has been thought that rubber offered a more immediate return, so a subsidiary company called the Monrovia Rubber Co. has been formed to purchase and work the Liberian Rubber Syndicate which has the right of collecting and exporting rubber for 20 years. In this subsidiary company the Dunlop company provide the working capital and the profits are to be divided equally between them and the Liberian Development Co. Sir Harry Johnston is managing director of the latter, and has formed favorable opinions of its prospects. He has despatched rubber experts chosen for their knowledge of mineralogy to the scene of action, and rubber is expected at the port of shipment by the middle of May. It is to be hoped that the double barrelled experts will acquit themselves creditably. I am afraid that a knowledge of mineralogy would not prove much of a testimonial for a managerial position in a British rubber works. It is stated that the chartered company is recognized by the Foreign and Colonial offices, though I doubt if such recognition will amount to much in the case of border raids on the company's preserves. It is now about 18 years since Mr. C. W. Meiter, of London, got a Liberian rubber concession, which I understand was never really worked. All I know about the Liberian Rubber Syndicate brought out by the new company is the exhibit of rubber shown at the stand of the Liberian republic in the late Paris exhibition. The samples of raw rubber were said to be odorless and prepared in a scientific manner by the syndicate's special process, which may or may not prove all that is claimed for it.

THIS show, the first of its kind devoted entirely to the motor car industry, was opened at the St. James Hall on March 7, by the Earl of Shrewsbury and Talbot, who is closely connected with the trade in his position as chairman of the Shrewsbury & Challiner Tyre Co., Ltd., of Ardwick Green, Manchester. Lord Shrewsbury spoke hopefully of the future of the British motor industry, saying that England owing to her laws had been greatly handicapped in the past compared with her continental competitors. Though he was not an advocate of racing for the future, he thought that the sport had been most useful in producing cars as light as possible with the best workmanship. Although most of the British and foreign makes of tires were to be met with up and down the hall on different machines, the only rubber manufac-

MANCHESTER
MOTOR SHOW.

THE
STATE
OF TRADE.

turers having stands were Messrs. Charles Macintosh & Co., Limited, David Moseley & Sons, Limited, and The North British Rubber Co., the Dunlop company, so regular at all shows, being on this occasion a conspicuous absentee. Macintosh's exhibit was an attractive one, though not comprising any completed tires. Inner tubes of red rubber, solution, millerain clothing, waterproof motor coats and rugs were prominent among the numerous accessories for the motor trade supplied by the firm. It may be mentioned that they make a specialty of re-treading motor tires, vulcanizing the new tread to the old cover. The North British exhibit is better described as that of Michelin & Co., as all, or at any rate the bulk of the exhibits were evidently from Clermont-Ferrand. The explanatory notices were mostly in French, a somewhat novel feature in a British show. Besides an attractive exhibit of accessories, the pyramids of tires comprised round and square treads, the non-slipping tread with steel inserts being prominent. Red rubber inner tubes were to the fore here, as also with Messrs. Macintosh and Moseley. At the time of my inspection the stand labelled the Seddon Tyre Co. was a blank, and the only other tire company exhibiting was the Shrewsbury & Challiner, who showed a special tire they have recently designed for motors. Apparently no patent rights are claimed for this tire, the advantages claimed for it being the superior mechanical attachment which allows of the tube being taken out easily for repairs. The company are large makers of wheels for various vehicles, and with tires attached these formed the main feature of their exhibit. I noticed a Mercedes car with violet colored tires of Continental make, but found on inquiry that the color was merely superficial and not indicative of any alteration in the make of these well known tires. The firm of Cottureau, of Dijon, France, was represented by their agents, Messrs. McNeill, Hutchinson & Barthwick, of Manchester, and the advantages claimed for the Sée non-slipping tread were set forth. This is a band of leather studded with metal, and covers the rubber tread entirely.

THE reference to this subject in Franz Clouth's book on rubber is of interest and suggests a few comments. I don't know

SAFETY APPLIANCES FOR MIXING ROLLS.

whether there are any regulations on the subject in America, but in France, Germany, and Austria it is compulsory in rubber works to have safety mechanism attached to washers, mixing rolls, and calenders. In England no such law prevails and but little has been done in this way. Dr. Weber in the appendix to his book refers to the ordinary clutch and striking gear as being very inefficient in cases of emergency, and thinks that it ought to be superseded by some of the improved types on the market. It may not be generally known, but Messrs. Crossley Brothers, of gas engine fame, were at one period of their career makers of rubber machinery, and I understand that the subject of safety mechanism had their attention. Our rubber machinists have been by no means backward in the matter; indeed, to fill their foreign orders they have had to pay particular attention to it, with results that must be considered eminently satisfactory. For instance, Messrs. Iddon, of Leyland, and David Bridge & Co., of Castleton, are always prepared to fit such mechanism to machines of their manufacture where it is specified for, though the details of their methods are by no means identical. In some of our English rubber works the men engaged at the washing rolls use a wooden pole* in order to minimize any risk of accident, and really in these days of

workmen's compensation, it certainly seems advisable for masters to see that any unnecessary risk is eliminated. It cannot be said that serious accidents are at all numerous, but still there are a sufficient number on record to make it evident that the continental regulations are not representative merely of arbitrary and unnecessary interference. I do not know what the feeling of our manufacturers is with regard to state interference in this matter, but the general opinion as regards the various restrictions under the Factory acts is that the trade is sufficiently hampered. The rubber machinists think that safety appliances should be universally used, but then they are hardly to be considered in the light of disinterested parties.

THE appeal case of the Dunlop Rubber Co. v. David Moseley & Sons has attracted considerable attention, and not only be-

THE LAW COURTS.

cause of the particular interests involved but also because the judgment in the defendants favor gives effect to a point of law which does not appear to have hitherto been thrashed out. The facts have been already referred to in the case of the trial before Mr. Justice Swinfen Eady, but may be briefly recapitulated. Messrs. Moseley manufactured the outer covers of pneumatic tires and sold these to persons who got the inner tubes and rims elsewhere, in order to turn out the complete article. The patent of the Dunlop company is for the combination of parts, and not for any part by itself, and judgment for the defendants was based on the fact that they merely made and sold the outer covers which they were entitled to do. Judging by the questions put to their counsel by the judges, the Dunlop case was much weakened by their not proceeding against any actual person who made up the complete tires proving definite collusion with Moseley's and marking them parties to the action. It was said by the plaintiffs that this was impossible, but the judges were evidently not of this opinion. It was not sufficient they said to show that instructions were issued in a catalogue showing how infringement could be perpetrated it was necessary to prove the act of infringement. The failure to do this proved the main stumbling block to the plaintiff's claim, though of course it is an open question whether an amended claim would have met with greater success.—The appeal case of the Dunlop company against The North British Rubber Co. also went against the plaintiffs, the arrangement come to between the defendants and Michelin & Co. of Clermont-Ferrand with regard to the manufacture and sale of Clincher-Michelin motor tires being upheld as within the rights of the defendants under their Dunlop license. With regard to the successful action brought by the Dunlop Co. against the Hyde Rubber Co., it should be noted that the defendants are a distinct firm from the Hyde Rubber Works, Limited, the successors of the Hyde Imperial Rubber Co.

SUBSTITUTE FOR INDIA-RUBBER.

DANIEL H. DUPONT-FRANKLIN (United States patent 746,689), produces a substance which he describes as resembling India-rubber, by mixing together coal tar and boracic acid dissolved in alcohol, boiling said mixture, and supplying oxygen thereto. As a specific example, he mentions the combination of 100 parts coal tar and 25 parts acid, boiling for a proper length of time, and introducing the same into a vessel heated to about 60° C., into which oxygen is introduced. To determine when the mixture has been boiled sufficiently, the vapors which arise during boiling are ignited, and the boiling is permitted to continue until a green flame appears. Instead of coal tar, tar of petroleum or other hydrocarbons may be used, and the boracic acid may be replaced by other acids.

* The practice of using wooden poles in connection with any type of roll washer is far from being a wise one, as the wood is apt to splinter, and these splinters once bedded in the rubber are very hard to extract. As our correspondent indicates, however, the practice is not a general one.—THE EDITOR.

SOME SUCCESSFUL MEN IN THE INDIA-RUBBER TRADE.

JAMES BENNETT FORSYTH.

IF any single rubber factory should be selected, to illustrate in its history the development of the India-rubber industry in the broadest sense, there could scarcely be an objection anywhere to giving the preference to the Boston Belting Co. The seal of that company bears the date 1845, but the business dates back, in unbroken succession, to the first important attempts to make rubber goods in this country, and their premises embrace the original building—one which possesses additional historic interest as having been the scene of part of Charles Goodyear's early work. But while entitled to the palm in respect to age, the company has never lost the spirit of progressiveness which started it on a career of success from its first adoption of the process of vulcanization, and in no other rubber factory have a greater number of practical processes and appliances been developed. This sketch, however, is not meant as a history of the company, further than outlining the connection with it of the present general manager, Mr. James Bennett Forsyth, covering a period of forty-one years, by the end of the present month.

While the company has become known wherever mechanical rubber goods are used, the active head of the business, jealously devoted to its success, has not sought public notice in any way. Hence the portrait of Mr. Forsyth, presented on this page, is the first that has ever appeared in any journal, and the present sketch of his career is probably the first that has been seen by the rubber trade.

Mr. Forsyth was born in Brookline, Massachusetts, February 2, 1850, and six years later his family removed to Roxbury, where his father, William Forsyth, had charge of a department in the Boston Belting Co.'s factory. The son's health at an early age was such as to prevent his regular attendance at school, and the family physician advised that he be put at some light employment as a probable means of improving his health. Early in his fifteenth year, therefore, he was placed in the office of Mr. Merrill, clerk of the company at the factory, to assist him generally in the office, and to go to the postoffice and the bank. At that time John G. Tappan was treasurer of the company, and Charles McBurney the manufacturing agent, the company's store in Boston being conducted under the style of Tappan, McBurney & Co., selling agents. The superintendent was Robert Hale. It was a part of the duties of the young assistant clerk to go frequently through the mill, particularly in regard to goods to be shipped to the store, and after a time he asked permission of the superintendent to work in the mill when he could be spared from the office. Mr. Hale consented, and he worked for several hours each week, first in one department and then another as he chose, for a year or more.

On February 1, 1864, Mr. Merrill having been forced by illness to retire, his assistant was promoted to the office of clerk. Fourteen months later, he was made assistant superintendent

under Charles McBurney, who had succeeded Mr. Hale, and on April 1, 1886, Mr. Forsyth became superintendent. Four years later he took the position also of manufacturing agent. These two positions he held until the spring of 1884, when he relinquished the work of superintendent, and in addition to manufacturing agent was made general manager of the company, and these two positions he has held until recently. At present, however, he devotes his attention to the duties of general manager, with the assistance of his brothers in other positions as mentioned further on.

Mr. Forsyth has contributed greatly and in very many ways to the success and prosperity of the company, both through his inventions and his administrative ability. His patented inventions cover many useful machines employed in the industry, and many important articles of manufacture. Several years

ago it was stated that he had taken out more than 50 patents. A complete list of these is not now available, but a reference to the patent office records subsequent to the date alluded to shows that additional patents have been granted to him almost every year. They cover machinery for the making of rubber hose, for making and stretching rubber lined cotton and linen hose; rubber covered rollers for use in cotton, woolen, and paper mills, print and dye works, bleacheries, and so on; together with many others.

The family of Mr. Forsyth is of French extraction, existing for many generations under the name Forsath or Forsaith, which became Forsyth on the removal of a branch of the family to Scotland. Captain Alexander Forsyth, born in Ayrshire in 1689, removed to Boston, where he was married in 1715, and where for many years he was

selectman and otherwise a prominent citizen. His son John also rose to many positions of public trust in Boston. Both eventually returned to Scotland, and died there. A son of the latter, born in Scotland, was Captain John Forsyth, of the British army, whose son William (born in Ayrshire 1807—died Boston, 1876) was the father of the subject of this sketch. He married Jane, daughter of Hamilton Bennett, Esq., of Buxton, England. They are survived by four sons, all connected now with the Boston Belting Co., as follows: James Bennett, general manager; John Hamilton, superintendent; Thomas Alexander, manufacturing agent; George Henry, assistant manager.

Mr. Forsyth's determination and patience are remarkable. As an illustration of these excellent traits it is necessary only to cite the historic suits against the city of Boston in defense of his company's water rights in Stony Brook. In spite of every and all of the ingenious devices that the best legal talent could bring forward to delay the issue and tire out the plaintiff, he held grimly on, and after more than a score of years of litigation, was triumphant. He is a tireless worker, and has a record of practical experiments in India rubber and Gutta-percha that would fill volumes. He is, however, the keenest



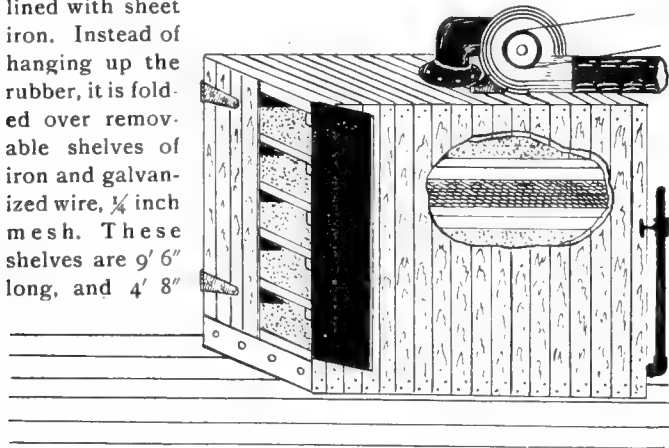
JAMES BENNETT FORSYTH.

of critics of his own work and often has special tests of new processes or appliances going for years before he accepts or rejects the results that they develop.

Not only has Mr. Forsyth brought to a successful issue a host of experiments in mechanical rubber goods, to which he has rigidly held the production of the Boston Belting Co., but he has been interested in pioneering other lines by assisting those who had ideas but not the knowledge or ability to develop them. Thus it is a matter of history that his helpfulness was a factor in starting other lines like footwear, insulated wire, clothing, and surgical goods, etc., and made them successful much earlier than they could ordinarily have hoped to be.

SQUIRES QUICK DRYING APPARATUS.

ARTHUR C. SQUIRES, of Akron, Ohio, who is well known to the rubber trade, sends to THE INDIA RUBBER WORLD a pen drawing of a quick drying apparatus of his own design, which he has already installed in a number of American rubber factories. It is used for the drying of crude rubber that has been washed and sheeted as thin as may be. The dryer is a small room, 10 feet each way, the whole being lined with sheet iron. Instead of hanging up the rubber, it is folded over removable shelves of iron and galvanized wire, $\frac{1}{4}$ inch mesh. These shelves are 9' 6" long, and 4' 8"



wide, and when the dryer is full there rests upon each one, sheets of rubber to a depth of about 3". Heat is applied through steam pipes at the bottom, while a small revolving fan at the top removes the moisture laden air. The dryer shown will handle about 3000 pounds in 24 hours, the heat being kept at 150° F.

THE GOLF BALL TRADE.

THE importations of manufactured Gutta-percha into the United States have increased remarkably within the last few years and in fact have almost quadrupled within a year. In the year 1902 the importations of manufactured Gutta-percha were \$121,123, and the importations for the same goods in 1903 amounted to \$442,580. Now what is the increase? An investigation into the golf ball business demonstrated very clearly that the increase was not in that line. Mr. Charles Cox, manager of the golf department of A. G. Spalding & Brothers (New York), who handle more golf materials than any others in this country, says that the increased importations of Gutta-percha do not come from golf goods.

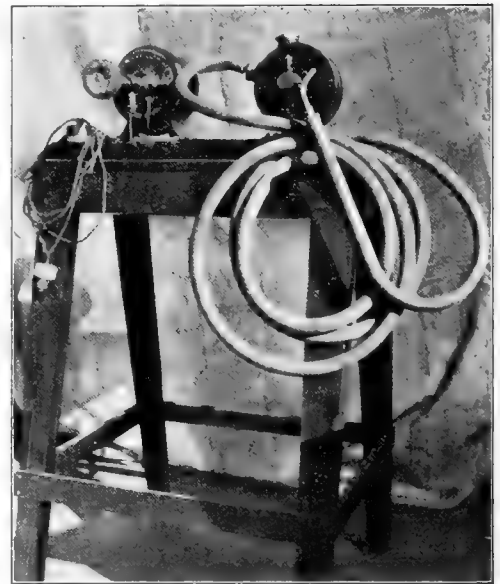
"As a matter of fact," says this authority, "the importations of golf balls amount to nothing. I do not believe that there is as much as fifty dozen golf balls imported, and these as you must know are solid balls, made for a few cranks who do not

recognize the merits of the rubber cored ball. Three or four years ago we imported about \$150,000 worth of balls; now there are five or ten times as many golf balls exported as are imported. It is well understood that the rubber cored ball is very much better than the solid Gutta-percha ball, and of course this ball is a Yankee invention. We make our own golf balls under the Haskell license, and the balls that are made in Europe are under the same license.

"The golf ball business in this country is many times as large as it formerly was, and we sell a thousand dozen where we used to sell a hundred dozen. But we do not import our stuff. As the game grows in popularity in America, America shows its ability to furnish what is needed. Golf was a Scotch and English game to start with, now those countries use American balls to play it with."

TELEPHONE SWITCHBOARD CLEANER.

THE accompanying illustration shows a very useful and economical apparatus for cleaning telephone exchange switchboards, the utility of which is directly dependent upon the use made in it of India-rubber. All those who are familiar with telephone switchboards and their accessories, know the difficulty of keeping them free from dust, corrosion, and the trouble resulting therefrom. More especially is this true of the common battery switchboard where cabling and wiring are more numerous and difficult of access. The apparatus consists of a $\frac{3}{8}$ HP. motor belted to an air blower, the two being mounted upon a wooden horse which is



on rollers and can easily be moved around the room by the operator. There are a plug, extension cord and switch for making connection with the house lighting system for operating the motor. The motor has an extension shaft on one side that carries a buffer. This is used for polishing plugs, to ensure perfect contact in the spring-jacks. The air blower has attached about 20 feet of rubber hose with nozzle. With this apparatus switchboards can receive a systematic, rapid, and economical cleaning. Devised by J. E. Peavey, superintendent of equipment of The Cincinnati Suburban Bell Telephone Co. (Cincinnati, Ohio), which company have had it in satisfactory use for some time.

COTTON AND RUBBER SPORTING SHOES.—An importation of sporting shoes, composed of cotton and India-rubber, was assessed for duty at Plattsburg, New York, as rubber goods. The protest of the importer that the same should be classed as wearing apparel composed in chief value of cotton and having India-rubber as a component material, was sustained.

NEW GOODS AND SPECIALTIES IN RUBBER.

THE MACHINE MADE RUBBER SHOES.

VERY few of the many who are interested in the great industry of making or marketing rubber shoes have seen the machine made shoes whose advent was heralded some time ago both in the daily press and in THE IN-

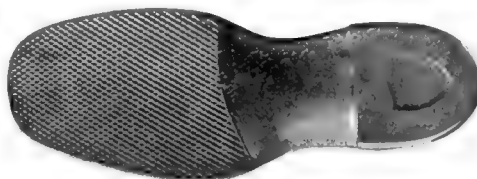
DIA RUBBER WORLD. It is, therefore, with some considerable satisfaction that we now present our readers with a likeness of one of the first pairs to be put on the market. The goods illustrated are men's heavy overs of the "Perfection" type, and certainly, as far as appearance goes, leave little to be desired. The general effect of this shoe is that of a fine high class heavy leather



"ATLANTIC" PERFECTION.



"ATLANTIC" PERFECTION - INTERIOR.

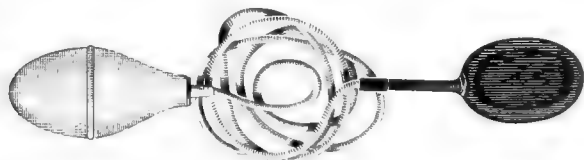


"ATLANTIC" PERFECTION—SOLE.

shoe, the lines of sole, heel, and upper being perfect, and entirely free from the vagueness that of necessity characterizes anything in rubber that is cured in open heat without an outside forming surface. A full line of these goods, with the exception of boots, are now ready for market. Indeed, the company are said to be quietly booking orders and shipping goods, although much definite information is not given out by the parties interested. They are not, however, able to keep those who are judges from appreciating the fact that they have a splendid plant, thoroughly equipped with modern machinery, and that the plant is running. This in itself is quick work when it is recalled that ground was broken as late as last May. [Atlantic Rubber Shoe Co., Providence, Rhode Island.]

THE "BOSTON JOKER."

THIS little toy is an adaptation of the old combination of a rubber bulb and tube, which, under favorable circumstances

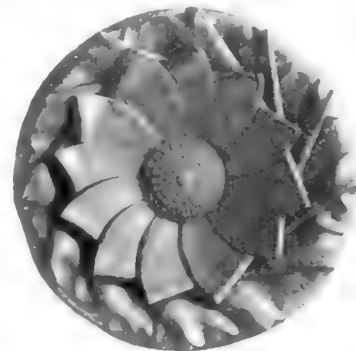


springs a surprise upon the unwary. An early use of it was in connection with a buttonhole bouquet, which the victim was invited to smell, when the bulb, securely hidden in the pocket, was squeezed and a fine stream of water caught the victim in the face. The joke was appreciated—by some, but the toy had only a limited sale. The new Joker is a bulb, tube, and a tiny

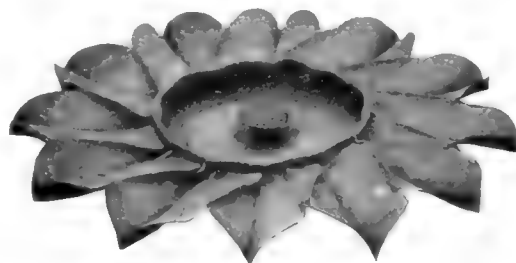
rubber bag. The latter is said to be placed under one's plate at dinner for example, the long tube allowing one at the opposite to hold the bulb beneath the table and out of sight. A gentle pressure on it lifts one side of a plate a half inch or so, and it is claimed that it is a most effective fun maker. Whether it is or not depends upon the type of humorist that one happens to be. At all events the toy is new. [Chandler & Barber, No. 124 Summer street, Boston.]

"MARIGOLD" AUTOMATIC SELF CLOSING TOBACCO POUCH.

AN exceedingly ingenious and practical pouch for pipe smokers is the English novelty shown in the accompanying illustrations. This is made of the best quality of red rubber, and was designed primarily to obviate the difficulty that pipe smokers have, as a rule, in filling directly from the pouch. It can be opened so that it lies almost flat, and closes automatically, the petals folding around and under the rubber button, securely holding the contents in place. These pouches are made in three sizes—for one, two, and three ounces of tobacco, respectively.



CLOSED.

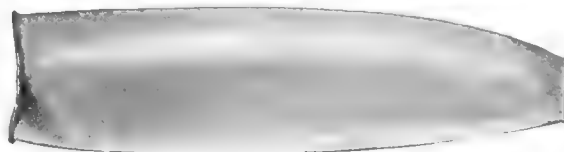


OPEN.

A further advantage is that it lies perfectly flat in the pocket, and from its peculiar shape will presumably last longer than the ordinary type. [J. L. Hancock, India-rubber manufacturer, 266, Goswell road, London, E. C.]

RUBBER SLEEVES OR ARMLETS.

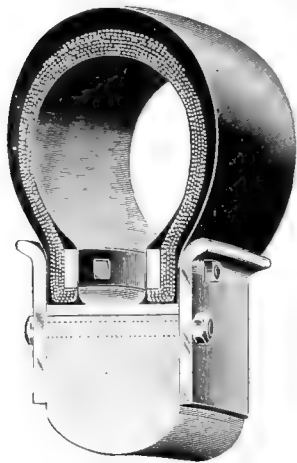
EITHER with or without the rubber glove the armlet of pure rubber finds many uses in the operating room, where it not



only protects the clothing of the surgeon but practically sterilizes his arms from wrist to biceps. These sleeves are 16 inches in length, seamless, and made of stock that is heavy enough to be lasting, but at the same time light in weight and very elastic. [The B. F. Goodrich Co., Akron, Ohio.]

A NEW VEHICLE WHEEL TIRE.

THE illustration relates to a new detachable pneumatic tire and to means for securing the outer cover of the same in position on the wheel rim. It is the



subject of United States patent No. 753,426, granted March 1, 1904, to Harry A. Palmer, of Erie, Pennsylvania. The patent covers the combination, in a vehicle wheel, of a wheel rim; a metal tire thereon; flange rings secured to the sides of the wheel rim so as to form a peripheral channel thereon; a pneumatic tire sheath provided with a slit on its inner face, and adopted, to inclose an inner tube, and fit into the channel on the wheel rim; clamping rings on the inner faces of the sheath opposite the

sides of the channel on the wheel rim; and bolts passing through said clamp rings, the sides of the sheath, and the flange rings. A modification of the same patent claim relates to the holding in position of solid rubber tires.

THE "STITCH-IN-TIME" VULCANIZER.

THE name adapted for the device illustrated herewith is based upon the adage that "a stitch in time saves nine," the idea being that many serious troubles with pneumatic result from the neglect of small cuts or punctures which might, with an inexpensive apparatus, be repaired with ease and promptness. The "Stitch-in-Time" vulcanizer is now made in sizes applicable to patches as large as $2\frac{1}{2} \times 3\frac{1}{2}$ inches. It may be operated in repairing a tire without removing it from the rim, the method being indicated in a measure by the illustration.



The vulcanizer has a thermometer to register the correct heat, and the lamp has a flame regulator to hold it at this point as long as necessary to complete the work. It may be used also to heal up small rents or cuts on solid rubber tires. The price is \$5, including a supply of material for a dozen repairs. The apparatus weighs only 5 pounds. Patented by J. M. Padgett. [The "Stitch-in-Time" Vulcanizer Co., Topeka, Kansas.]

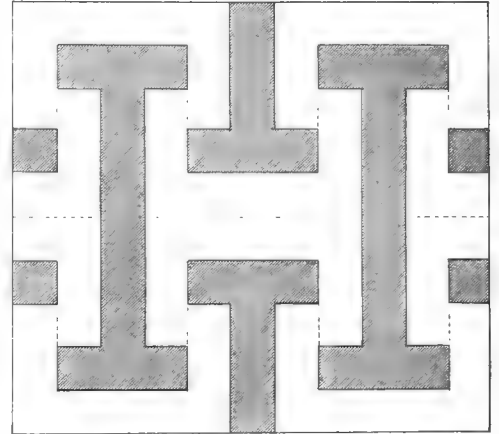
BOOK FINISHERS "GOLD RUBBER."

IT is well known that book finishers, both blank and printed, use a great amount of gold leaf. Their scrap is in the form of little bits that it would be almost impossible to collect and save, were it not for the use of "gold rubber." In its most primitive form, as it is made by the finisher, it is a ball of uncured pure gum that by the admixture of oil and the application of heat has been formed into a sticky ill-smelling mass. It only needed a practical rubber man to produce something that would have all of the virtues of the old and none of its faults for the finishers to accept it with enthusiasm. This has been accomplished by the Mattson Gold Rubber. It is a compact, malleable, odorless gum not too sticky and capable of any degree of softening by the gentle heat radiating from the tool heater. It remains forever plastic, and although it sticks like a miser to the gold, it does not stick to the fingers of the workman. It is put up in neat tin boxes each holding about three ounces. This small amount of gum will easily hold 32 penny-weight of gold or about \$30 worth before the olive oil, used in

the size begins to make it hard to handle. Long before this time, however, it is usually sent to the smelters where the burning of the rubber sets the gold free. [Mattson Rubber Co., No. 26 West Broadway, New York.]

ORNAMENTAL RUBBER TILING.

ANYTHING in the line of a locking device for rubber tiling is, at the present time, of interest, and the simpler it is the more it appeals to the practical man. The type shown in the accompanying illustration consists of two shapes, one like a capital "I," the other an "E" with the middle mark left out, thus **⌌**. These, when built together, hold perfectly



without using the familiar "interlocking" devices. The separate pieces of rubber need but two dies in the making, and are really short strips rather than blocks. By the use of different colors and combinations a great variety of artistic effects may be produced. Design patent No. 36 558, granted to R. L. Chipman, September 15, 1903.

THE CHASE MUFF LAP ROBE.

THIS combination of muff and lap robe is an excellent thing for all who drive, ride in automobiles, or journey by sea or land where a robe or rug is desirable. With the combination one's hands are kept warm and the rug is easily held in place—two boons that are not conferred by the possession of the ordinary robe. In construction the muff is a departure from anything yet made, as it has a rubber and wool padded interlining, making it both waterproof and windproof, and as warm as a fur muff. In the same way, the robe has a rubber interlining, is absolutely windproof, and in fact, is just as warm as a fur robe but much lighter in weight and not nearly as expensive. Patents have been applied for covering this promising novelty. [L. C. Chase & Co., No. 129 Washington street, Boston.]



THE "DRIMOSIT" RUG.

AN altogether new type of rug for automobilists, and one that has many advantages, is shown in the accompanying illustration.



The idea of this is to protect the feet and the legs from wet and from cold, and, at the same time, not to interfere with the work of the pedals. This the "Drimosit" does. It is a sort of garment, part blanket and part trousers, the lower portion ending in roomy feet equipped with thin leather soles. After stepping into it, the automobilist wraps it around him, fastening it with buttons or snaps. It is made in a great variety of materials, either

single or double texture mackintosh or in shower proof goods and affords ample protection, with perfect freedom of movement. [J. W. Lovegrove & Co., 175, Piccadilly, W., London.]

MARSH'S HYGIENIC RUBBER FINGER PAD.

THE device illustrated herewith marks a decided advance over the ordinary finger cot, for many uses. It is made in five sizes, so that any ordinary finger or thumb can easily be fitted. The face of the pad is of corrugated rubber, and for such uses as the counting of money, or the handling of either glazed or smooth sheets of paper by press feeders or binders, it is all that could be desired. It is also



said to have found a large field among postal employes. As a matter of fact, the office uses of this little device are almost manifold. It is made from black



rubber. Protected

by United States patent No. 719,352 (January 27, 1903), to Joseph G. Marsh; also by foreign patents. [Marsh Finger Pad Co., Manchester, New Hampshire.]

RAMIE FIBER IN RUBBER HOSE.

FOR some time past there has been upon the market a line of hose that shows remarkable strength tests, and that has in it



a woven fabric that in appearance resembles hemp. A careful testing of the fiber in this fabric shows it to be eight times as strong as cotton, and of such a nature that, unlike cotton, it will not mildew, nor is it injured in any way by moisture. The fiber, of course, is the well known ramie, which has so often been talked of as something that ought to be generally utilized in connection with rubber goods, and which has never hereto-

fore been successfully used. The illustration shows a section of air brake hose in which the fiber is woven in herring bone pattern around the inner tube. In this the friction is accomplished by a coating of a softer, easily flowing stock upon the inner tube which is forced into the interstices of the hose during the process of vulcanization. This hose stands a test pressure of between 900 to 1200 pounds to the square inch, according to the number of plies. The same type of weave and the same fiber is used in a great variety of hose besides air brake, even to fire hose, the product being patented. [Peerless Rubber Manufacturing Co., No. 15 Warren street, New York.]

BRIGHT COLORED SUBSTITUTES.

RUBBER substitutes as a rule, have been of two types, the white and the black, the variation in color being but shades of the above. It is therefore interesting to chronicle the advent of three new rape seed oil substitutes that are beautiful shades of crimson, orange, and yellow. These colors are as bright and lively as if they were high class pigments instead of oil substitutes, and according to the manufacturer they hold their colors during vulcanization. As they are made for admixture with rubber, and as the manufacturer knows the needs of the trade, this claim is likely to be borne out in practice. [William H. Scheel, No. 159 Maiden lane, New York.]

VULCANIZING SILK HATS.

A "NEW PROCESS" silk hat that has caught the English market is an adaptation of the well known cork lined head gear. The special value of the new type seems to be in the attachment of the light cork lining to the silk by a fine rubber solution which is afterward heated and partially vulcanized. [The City Cork Hat Co., 181, Strand, E. C., London.]

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values for January, 1904, and the first seven months of five fiscal years, beginning July 1 from the treasury department at Washington:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
January, 1904.....	\$ 81,034	\$100,757	\$ 135,638	\$ 317,429
July-December. ...	549,771	727,888	1,265,617	2,443,276
Total... ..	\$530,805	\$828,645	\$1,401,255	\$2,760,705
Total, 1902-03...	467,156	874,830	1,229,405	2,571,391
Total, 1901-02...	355,509	833,034	940,363	2,129,806
Total, 1900-01...	304,762	587,687	963,740	1,856,189
Total, 1899-00...	310,296	253,861	748,242	1,312,399

EXPORTS TO NON CONTIGUOUS TERRITORIES.

OFFICIAL statement of values of rubber goods for the last six months of two years past:

	1902.	1903.
Alaska.....	\$ 57,787	\$ 59,801
Hawaii.....	29,807	40,369
Porto Rico.....	20,086	25,430
Philippines.....	61,905	60,881
Total, six months.....	\$169,585	\$186,461

DOMINION OF CANADA.

VALUES of imports of India-rubber goods for the six months ending December 31, in three years, officially stated:

FROM—	1901.	1902.	1903.
Great Britain.....	\$ 93,185	\$139,285	\$168,842
United States.....	289,597	274,253	313,354
Other countries.....	9,012	7,621	8,746
Total.....	\$391,794	\$421,159	\$490,942

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED FEBRUARY 2, 1904.

- N**O. 750,838. Tire [cushion]. H. G. Fiske, assignor to Morton Trust Co., trustee, both of New York city.
- 750,873. Insulating sleeve and method of making same. N. Marshall, Newton, Mass.
- 750,878. Vaginal syringe. O. P. Moon, Lorian, Ohio.
- 750,931. Hose coupling. Hugh R. Ashby, Mustard, Pa.
- 750,968. Dust spraying device. J. R. Haldeman, Springfield, Mo.
- 751,160. Rubber and metal cap tip for chairs. S. Garrett, assignor to Garrett Tip Co., both of Chicago.
- 751,184. Hoof pad. A. Larsen, Chicago.
- 751,215. Form pad [involving inflatable bag]. K. L. Stenhouse, Chicago.
- 751,256. Fountain pen. W. H. Canfield, Newark, N. J., assignor to Patent Development Co. of America, New York city.
- 751,259. Hose coupling. C. E. Chaffey, Pittsburgh, Pa.
- 751,266. Pocket spittoon. J. M. A. Deydier, Nyons, France.
- 751,354. Insulated wiring tack. D. G. Smart, Grand Rapids, Wis.
- 751,358. Horse collar [with inflatable cushion]. J. V. Stone, assignor to H. Rasmussen and two others, all of Moorhead, Minn.
- 751,380. House cleaning apparatus. G. Clements and J. M. Hostler, Chicago.
- 751,391. Hose coupling and shut off [for air brake hose]. L. D. Goughenour and J. A. Marx, Braddock, Pa.—Goughenour assignor to Marx.
- 751,415. Nipple shield. F. P. Prindle, Stamford, Conn.

Trade Marks.

- 41,966. Rubber heels and soles for boots and shoes. Foster Rubber Co., Boston. *Essential feature.*—A circular figure of relatively small spots contrasting with a darker background. Used since Jan. 15, 1901.
- 41,996. Golf balls. I. B. Kleinert Rubber Co., New York city. *Essential feature.*—A band of distinctive color applied to or produced on a golf ball or a representation thereof. Used since Dec. 15, 1903.

ISSUED FEBRUARY 9, 1904.

- 751,493. Vulcanizer [for small work]. J. F. Funck, assignor of one half to P. Funck, both of Rochester, N. Y.
- 751,551. Horse collar [with inflatable tube]. F. A. Pett, Denver, Colo.
- 751,556. Vulcanizer for repairing tires. H. K. Raymond, assignor to The B. F. Goodrich Co., both of Akron, Ohio.
- 751,631. Hose coupling. J. Gluck, New York city.
- 751,682. Air brake coupling. J. H. Phillips, Pottsville, Pa.
- 751,817. Elastic heel. F. H. Stubner, East Rutherford, N. J.

Trade Marks.

- 42,011. Rubber gloves. The Pure Gum Specialty Co., Barberton, Ohio. *Essential feature.*—The word "Mitzel." Used since Sept. 1, 1901.
- 42,018. Syringes. Frederick Stearns & Co., Detroit, Mich. *Essential feature.*—The word "Simplex." Used since Jan. 6, 1904.

ISSUED FEBRUARY 16, 1904.

- 752,024. Jar closure. H. S. Brewington, assignor of one half to W. F. Seim, both of Baltimore.
- 752,085. Hose coupling. L. V. Long, assignor of one half to J. A. McKean, both of Bowerston, Ohio.
- 752,114. Breath guard. L. Sennett and A. L. Moore, Russell, Ky.
- 752,116. Flooring or wall covering material [waterproofed with rubber]. J. J. C. Smith and M. Smith, Passaic, N. J.
- 752,147. Sponge rubber mattress. M. L. Derick, Chicago.
- 752,228. Pneumatic tire. H. E. Irwin, Galesburg, Ill., assignor to Irwin Rubber Co., Chicago.
- 752,361. Vaginal douche. N. C. E. Schwartz, New York city.
- 752,414. Covered elastic cord. R. B. Price, Chicago.
- 752,415. Apparatus for mounting tires. R. B. Price, Chicago.
- 752,416. Rubber vehicle tire [solid]. R. B. Price, Chicago.
- 752,417. Rubber vehicle tire [solid]. R. B. Price, Chicago.
- 752,516. Foot warmer [of flexible waterproof material]. J. D. Carney, Clinton, Mo.
- 752,632. Heel. E. D. Tyler, Glasgow, Scotland.

ISSUED FEBRUARY 23, 1904.

- 752,639. Cushion tire. S. Adlam, New York city.
- 752,654. Means for inflating life belts. Henry Clews, Jr., New York city, and F. V. Dalziel, Paris, France.
- 752,703. Controlling device for vulcanizers or like apparatus. C. E. Orndorf, Ligonier, Pa., assignor of one half to L. S. Smith & Son, Pittsburgh.
- 752,826. Tire repairer. C. C. Deschenes, Fall River, Mass.
- 752,833. Attachment plug [for electrical apparatus]. P. H. Fielding, New York city.
- 752,891. Rubber tire. G. B. Dryden, Chicago.
- 752,951. Rubber-like gum [derived from *Picradenia floribunda utilis*, the much vaunted rubber plant of Colorado]. M. G. Brownell, Denver, Colo.
- 752,952. Rubber-like gum. M. G. Brownell, Denver, Colo.
- 752,975. Machine for working rubber. Arthur N. Hood, Boston.
- 752,988. Rubber-like material [derived from *Picradenia floribunda utilis*]. Richard A. Leigh, assignor to the Western Rubber Co., both of Denver, Colo.
- 753,000. Glove. W. B. Phillips, Fort Wayne, Ind.
- 753,002. Bath Tub. C. A. Ricks, Glenville, Ohio.
- 753,063. Water bottle. J. F. Goodridge, Boston.
- 753,096. Hose coupling. P. C. Osteen, Hendersonville, N. C.
- 753,184. Typewriter attachment. L. H. Weston, Deer Island, Oregon.
- 753,204. Method of manufacturing cushion tires. M. Nirdlinger, Philadelphia.
- 753,205. Vehicle tire. *Same.*
- 753,206. Art of manufacturing vehicle tires. *Same.*

ISSUED MARCH 1, 1904.

- 753,230. Hose [spirally wound, for air brakes]. R. B. Calcutt, Chicago.
- 753,310. Composition of matter [including India-rubber] W. A. Price, assignor to the Electric and Dental Specialty Co., both of Cleveland, Ohio.
- 753,322. Garment [shirt with elastic insertion from top to bottom, in front, in lieu of openings]. J. A. Scriven, New York city.
- 753,401. Vehicle tire. H. E. Irwin, Galesburg, Ill., assignor to Irwin Rubber Co., Chicago.
- 753,426. Vehicle wheel tire [pneumatic]. H. A. Palmer, Erie, Pa.
- 753,593. Fountain marking device. J. E. Langill, New York city, assignor to Langill Fountain Pen and Brush Co., Jersey City, N. J.
- 753,634. Hose nozzle. C. L. Sankey, Yonkers, N. Y.
- 753,646. Tire for vehicle wheels. J. A. Swinehart, Akron, Ohio.
- 753,684. Truss for ruptures [with pad of sponge rubber]. B. J. Douds, Canton, Ohio.

Reissue.

- 12,200. Bottle tap. J. A. Sherrard, Boston, Mass.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1903.

[* Denotes Applications from the United States.]

802. Silvio T. Tatti, London. Compound for use in dress shields. Jan. 12.
824. W. Bentley, Liverpool. Pneumatic wheel for vehicles. Jan. 12.
837. D. Anderson and H. J. S. Cassal, London. Pneumatic tire. Jan. 12.
936. J. Birtwistle, Manchester. Pneumatic tire. Jan. 14.
- *988. T. R. J. Willis, Kingston-on-Thames. Hose coupling. —(J. Homola, United States.) Jan. 14.
- 1,073. Marie L. Rollier, London. Boot heel. Jan. 15.
- 1,131. W. A. Morrall, Birmingham. Pneumatic tire. Jan. 16.
- 1,156. F. W. Mottershaw and C. Macintosh & Co., Limited, Manchester. Inflatable toy. Jan. 16.
- 1,160. H. W. Hanwell, Coventry. Device for adjusting the length of gas tubing and the like. Jan. 16.
- 1,183. W. C. Church, M. Griffiths, and C. C. Braithwaite, London. Brake blocks for vehicles and tire treads for use therewith.
- 1,219. Oswald G. Moseley, Manchester. Pneumatic tire. Jan. 18.
- 1,243. G. V. Brooks, London. Pneumatic tire. Jan. 18.
- 1,260. S. Miller, London. Pneumatic wire tire. Jan. 18.

- 1,297. C. W. Zaring, London. Horseshoe pad. Jan. 18.
 1,291. C. W. Zaring, London. Composite soft tread for tires, horse-shoe pads, mats, etc. Jan. 18.
 1,317. R. Sharpels, Swinton. Unpuncturable tire for motors. Jan. 19.
 1,356. W. Baxter and F. W. Summerfield, Wolverhampton. "B and S" rubber sole. Jan. 19.
 1,367. D. S. Hodge, Bradwell-on-Sea. Pneumatic tire. Jan. 19.
 1,373. R. Bell, Glasgow. Rubber tire for motors. Jan. 19.
 1,384. E. F. McArdle, London. Elastic tire. Jan. 19.
 1,454. T. H. Roberts, and N. Roberts, Manchester. Rubber pad for boots. Jan. 20.
 1,486. G. S. Ogilvie, London. Tire for motors. Jan. 20.
 1,490. F. H. Richardson, London. Means for preventing tire punctures. Jan. 20.
 1,497. E. Midgley, London. Pneumatic tire. Jan. 20.
 1,553. H. Taylor-Stephens, London. Pneumatic tire cover. Jan. 21.
 1,712. R. Appleyard, London. Golf ball. Jan. 22.
 1,724. F. C. Jones, London. Rubber connection for rubber and metallic tube. Jan. 23.
 1,726. J. McCraith, Melton-Mowbray. Substance suitable for replacing or in conjunction with Caoutchouc. Jan. 23.
 1,735. E. N. Molesworth-Hepworth, Manchester. Golf ball. Jan. 23.
 1,781. F. Wackenbuth, London. Syringe. Jan. 23.
 *1,870. F. J. Gruss, London. Vaginal syringe. Jan. 25.
 1,889. J. P. Higgins, London. Improvement in wheel rim and a tire therefor. Jan. 25.
 1,904. W. M. Thompson, London. Prevention of side slipping in vehicle tires. Jan. 25.
 1,919. T. J. R. Clarkson, Birmingham. Prevention of side slipping in pneumatic tires. Jan. 26.
 1,930. G. Murray, Glasgow. Method of waterproofing textile fabrics. Jan. 26.
 1,946. Christian H. Gray and T. Sloper, London. Securing pneumatic tires to rims. Jan. 26.
 1,976. A. Nehemias, London. Fountain penholder. Jan. 26.
 1,989. F. W. Page and T. W. Cope, London. Detachable heel tips for boots. Jan. 26.
 1,992. W. P. Thompson, London. Inflation of pneumatic tires. (Communicated from Italy.) Jan. 26.
 1,996. E. Hör and H. Wieser, Liverpool. Tire valve. Jan. 26.
 2,114. C. T. Scott, Sheffield. Non-skidding cover for pneumatic tire. Jan. 28.
 2,121. W. Foster and B. S. Foster, Leeds. Revolving boot heel. Jan. 28.
 2,173. A. Merritt, London. Improvement in wheel rims and tires. Jan. 28.
 2,183. H. R. Ashby, London. Hose coupler. Jan. 28.
 2,272. G. W. Pitt and E. Martin, London. Tread for vehicle tires. Jan. 29.
 2,388. W. R. Taylor, Birmingham. Solid automobile tire. Feb. 1.
 2,483. A. G. Bloxam, London. Injection syringe (J. & H. Lieber, Germany). Feb. 1.
 2,493. E. J. Bliss, London. Cushion heel pad for boots. Feb. 1.
 2,518. C. Harvey, Glasgow. Pneumatic tire valve. Feb. 2.
 2,554. H. Schnepf, London. Pneumatic tire. Feb. 2.
 2,605. M. Simpson, Liverpool. Detachable heel for boots. Feb. 2.
 2,621. E. Boydell, London. Tire valve seat. Feb. 3.
 2,712. R. Lenel, London. Waterproof collars and cuffs. Feb. 3.
 2,718. A. H. Hayles, London. Elastic tire. Feb. 3.
 2,775. W. H. Burtonshaw and F. R. Pedder, Bradford. Heel pad for boots. Feb. 4.
 2,779. W. Fernie, Glasgow. Golf ball. Feb. 4.
 2,780. J. H. Roger, Glasgow. Golf ball. Feb. 4.
 2,788. R. W. B. Oppenshaw, Bournville, near Birmingham. Wheel rim for securing pneumatic or solid rubber tires. Feb. 4.
 2,816. G. V. De Luca, London. Golf ball. Feb. 4.
 2,830. J. Griffiths, London. Adjustable bootheel pad. Feb. 4.
 2,834. A. F. Longdon and W. Forman, London. Knitting machine for tubular elastic fabrics. Feb. 4.
 2,880. H. Cassell, Glasgow. Puncture proof tire cover. Feb. 5.
 2,882. E. W. Wooders, Manchester. Rubber bootheel pad. Feb. 5.
 2,982. L. Lessman and M. Weinkopf, Manchester. Preparation for impregnating rubber tires. Feb. 6.

- 2,991. T. H. Sample and Charles Macintosh & Co., Limited, Manchester. Inflatable musical toy. Feb. 6.
 2,997. J. F. Funck, London. Improvement in vulcanizers. Feb. 6.
 3,035. G. Moore, Jr., Birmingham. Bicycle tire. Feb. 8.
 3,047. T. Gare, Manchester. Elastic tire. Feb. 8.
 3,086. R. Martini and W. A. A. Grevers, London. Tire rim. Feb. 8.
 3,169. F. D. Cash, London. Suspension chain for rubber gas tubing and the like. Feb. 9.
 3,202. P. S. Fowler, London. Elastic tire. Feb. 9.
 3,259. J. Alloatti, Liverpool. Prevention of side slip in vehicle tires. Feb. 9.
 3,290. F. N. Molesworth-Hepworth, Manchester. Golf ball, billiard ball, etc., and means of connecting portions thereof. Feb. 10.
 3,296. E. P. Wooders, Manchester. Revolving boot heel. Feb. 10.
 3,303. E. Niederhäuser, London. Tire cover. Feb. 10.
 3,347. R. M. Howison, London. Heel pad. Feb. 10.
 3,362. C. A. Brackelsberg, London. Pneumatic tire. Feb. 10.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JANUARY 27, 1904.]

- 21,326 (1902). Bandage-tourniquet. E. Denain, Paris.
 *21,255 (1902). Dress shield. D. Basch, New York city.
 *21,356 (1902). Dress shield. D. Basch, New York city.
 21,371 (1902). Vehicle wheel. J. Hamilton, Leicester.
 21,375 (1902). Laying electric cables [device to prevent injury to insulation when laying at low temperatures]. G. Zaph, Cologne, Germany.
 21,380 (1902). Pneumatic tire [chain nail embedded in cover]. E. Medsley, London.
 21,419 (1902). Spraying nozzle [for garden hose, syringes, etc.]. W. C. G. Ludford, Sutton-Coldfield, near Birmingham.
 *21,444 (1902). Marine life saving belt. H. A. Ayvad, Hoboken, New Jersey, United States.
 21,458 (1902). Pneumatic tire [cover protected by pigskin]. C. F. Cooper, Leytonstone.
 21,478 (1902). Waterproof cloak. S. L. Mandleberg, Salford, and A. H. L. Wyatt, Thames Ditton.
 21,504 (1902). Rubber bootheel. W. McLellan, Bredbury, and G. Mellor, Woodley.
 21,575 (1902). Pneumatic tire. R. Williams, London.
 21,594 (1902). Rubber bootheel. T. H. Slack, Alderley Edge.

[ABSTRACTED IN THE OFFICIAL JOURNAL, FEBRUARY 3, 1904.]

- 21,639 (1902). Heel protector. E. C. Stacey, Cleethorpes.
 21,745 (1902). Pneumatic tire [with suitable rim]. H. Sandwith, London.
 21,866 (1902). Heel protector. A. G. Leach, Kingston-upon-Hull.
 [ABSTRACTED IN THE OFFICIAL JOURNAL, FEBRUARY 10, 1904.]
 22,172 (1902). Golf ball. Charles J. Grist, Banstead, Surrey.
 22,227 (1902). Tool for smoothing garden paths. A. J. Boulton, London. (G. J. Hoskins, Ultimo, N. S. W.)
 22,301 (1902). Traveling bath. M. J. Adams, Scottswood-on-Tyne.

[ABSTRACTED IN THE OFFICIAL JOURNAL, FEBRUARY 17, 1904.]

- 22,462 (1902). Bottle stopper [with rubber washer]. J. Nies, Karlsruhe, Germany.
 22,590 (1902). Golf club [striking face may be India-rubber or Gutta-percha]. R. L. Urquhart and E. M. Urquhart, Dunbar.
 22,618 (1902). Method of impressing designs on India rubber during vulcanization. E. P. Raper, Low Ousegate, Yorkshire.
 22,662 (1902). Pneumatic tire. H. Jelley, Birmingham, and J. Jelley, Coventry.
 22,696 (1902). Glove protector. W. B. Walley, Lee, Kent.
 22,728 (1902). Pneumatic tire [with special rim]. J. Ashland, Gorey, Ireland.
 22,801 (1902). Sole and heel protector. G. Looms, Market Harbor-ough.
 22,804 (1902). Fire extinguisher. J. Wetter, London. (Communicated from Germany).

[ABSTRACTED IN THE OFFICIAL JOURNAL, FEBRUARY 24, 1904.]

- 22,855 (1902). Heel protector. J. C. Hale, Alexandria, Scotland.
 22,893 (1902). Handle for cricket bats. R. Abel, London.
 22,902 (1902). Pump for inflating motor tires. S. L. Boot, R. Clegg, W. Taylor, and J. Ediss, Addlestone, Surrey.
 22,973 (1902). Elastic tire [with lining of cork shavings]. F. F. Boyd, Inverernan, Hampshire.

- 23,002 (1902). Pocket spittoon. F. K. Beyer, Bielefeld, Germany, and another.
- 23,004 (1902). Resilient tire. J. Taylor, Salford.
- 23,033 (1902). Waterproof coat [may be used as a ground sheet]. T. S. Scarborough, J. Miller, and British Millerain Co., Halifax.
- 23,052 (1902). J. Hübner and C. Danne, Hannover-Linden, Germany.
- 23,118 (1902). Heel and sole. W. T. Sochon, London.
- 23,123 (1902). Pneumatic tire. C. Burnett, Durham.
- 23,146 (1902). Tube for feeding bottle. W. Foster and M. R. Ellis, Hull.
- * 23,160 (1902). Reservoir pen. J. Bovill, Chicago, Illinois.
- 23,213 (1902). Elastic heel. H. Holt, Cardiff.
- 23,214 (1902). Rubber heel tip. T. B. Smith, Gravesend.
- 23,234 (1902). Tube for feeding bottles. H. S. Barnes, Northfield, and J. Ellis, Kingston-on-Hull.
- 23,241 (1902). Brake blocks [formed by coiling fabric treated with rubber solution]. A. W. deVal, London.

GERMAN EMPIRE.

PATENTS GRANTED.

- 149,388 (Class 30*d*). Elastic stocking with hose-like calf having a longitudinal seam and connecting edge on the underside. W. F. Ware and W. R. Cartledge, Philadelphia, United States. Jan. 20.
- 150,296 (Cl. 39*a*). Process and appliance for molding hollow bodies out of plastic substances. E. Dor-Delattre, Budel, Holland. July 3, 1903.
- 150,337 (Cl. 37*d*). Door and window strips. H. Thust, Cologne. Jan. 9, 1903.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 215,176 (Class 30*f*). Friction glove armed with sponge rubber. Hannover'sche Gummi Kamm Co., A.-G., Hannover. Jan. 20.
- 215,177 (Cl. 30*f*). Friction band armed with sponge rubber. Hannover'sche Gummi-Kamm Co., A.-G., Hannover. Jan. 20.
- 215,697 (Cl. 3*b*). Knit glove coated with rubber. A. Ebenstein, Berlin. Jan. 27.
- 216,493 (Cl. 70*b*). Ink lead for fountain penholders. I. Bierlein, Berlin. Feb. 3.
- 217,102 (Cl. 3*a*). Rubber band, upon the ends of which are attached rubber pressure surfaces provided with clamps for cuffs. W. Kornacki, Königsberg. Feb. 17.
- 216,987 (Cl. 47*f*). Rubber hose having a roughened outer surface. Asbest u. Gummiwerke Alfred Calmon, A.-G., Hamburg. Feb. 17.
- 215,733 (Cl. 63*b*). Non tearable and non explosive rubber hose for pneumatic wheel tires. G. Moning, Berlin. Oct. 8, 1903.

APPLICATIONS.

- 10,202 (Class 41*b*). Elastic hat holder. M. Archambault, Paris. Feb. 3.
- 18,588. (Cl. 34*c*). Elastic buffing ring for brass buffing machines. G. Robinsohn, Dresden. Feb. 10.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION).

- 336,095 (Oct. 19, 1903). Cadet and Coignet. Unpuncturable pneumatic tire.
- 336,206 (Oct. 21, 1903). Seguin and de Roussy de Sales. Process of manufacturing caoutchouc.
- 336,312 (Oct. 30, 1903). Société Générale des Etablissements Bergougnan & Co. Corrugated tread for pneumatic and solid tires.
- 336,339 (Sept. 28, 1903). Dezarnaud. Receptacle for reserve pneumatic tires on automobiles.
- 336,408 (Nov. 2, 1903). Hirschson and Natanson. Pneumatic tire covers for bicycles and automobiles.
- 336,531 (Nov. 11, 1903). Goffin and Renouard. Tire for automobiles.
- 336,629 (Jan. 22, 1903). Legrand. "Take down" rim-felly for pneumatic and other elastic tires.
- 336,641 (Nov. 9, 1903). The Fawkes Rubber Co. (United States). Tires for bicycles and vehicles.
- 336,642 (Nov. 9, 1903). The Fawkes Rubber Co. (United States). Molds for wheel tires.
- 336,654 (Nov. 13, 1903). Société anonyme de Pneumatiques Cuir Samson. Process of attaching leather protectors on rubber tires.
- 336,706 (Nov. 9, 1903). Calmus. Non deflating pneumatic tire.
- 336,712 (Nov. 14, 1903). Chary. Elastic tire.
- 336,770 (Nov. 18, 1903). Société anonyme des Etablissements Falconnet-Pérodeaud. Elastic pebble-tread tire.

[NOTE.—Printed copies of specifications of French patents may be obtained from R. Bobet, Ingenieur-Consul, 16, avenue de Villiers, Paris, at 50 cents each, post-paid.]

NEW TRADE PUBLICATIONS.

WE have received from J. G. INGRAM & SON, of the London India Rubber Works (Hackney Wick, London), an illustrated catalogue of India-rubber goods of their manufacture, chiefly seamless molded surgical goods, and other like sundries. This catalogue is devoted to illustrations alone—twenty-two plates on large sized paper, each showing a number of articles indicated by numbers, and the whole substantially bound for permanent use. Accompanying it is a Price List, of recent issue, with references to the engravings in the catalogue. The price list is also printed in French and Spanish editions, the same illustrated catalogue serving equally well with either. This house dates from 1847, and are large contractors to the government, besides which an important export trade has been built up.

CONTINENTAL RUBBER WORKS (Erie, Pennsylvania) send us their first catalogue, devoted to bicycle and automobile tires. They have been granted patents on single tube and double tube tires and inner tubes, the details of which are illustrated in this pamphlet. Pedal rubbers, repair plugs, and valves are also illustrated. [5½"×8½". 16 pages.]

G & J TIRE CO. (Indianapolis, Indiana), issue a catalogue for 1904 of "G & J" detachable tires for use on automobiles, motor cycles, and driving carriages. Details are given of the special features of these tires, with the help of illustrations, together with prices for tires of different dimensions. [4¾"×6¾". 12 pages.]

THE MANHATTAN RUBBER MANUFACTURING CO. (New York) issue a portfolio of plates illustrating designs in colors of their Rubber Tiling, showing a number of attractive effects. [5"×7½". 13 plates.]

BOSTON WOVEN HOSE AND RUBBER CO. issue Catalogue C, devoted to rubber and cotton rubber lined Garden Hose. Beginning with some general considerations relating to garden hose construction, the catalogue describes in detail the various grades manufactured by the company, and ends with a list of hose fittings. [5¼"×7¾". 16 pages.]

B. PRIESTLEY & Co. (Bradford, England, and New York) send out a tastefully illustrated booklet showing uses for "Cravenette" raincoats, with some notes on the merits of these goods. [4½"×6½". 16 pages.]

MICHELIN TIRE CO.—United States agency (New York) issue a price list of Michelin pneumatic tires, for automobiles, made by the renowned factory of Michelin et Cie., Clermont-Ferrand, France, and also valves, repair outfits, and other accessories. [4½"×6½". 12 pages.]

PICHER LEAD CO. (New York and Chicago) issue a booklet entitled "The Story of Picher Sublimed White Lead," in which is recounted the experience of the inventor of the process of making white lead by sublimation, by the gentleman who is now the company's general manager, and the merits stated of the material thus produced. [6¾"×9". 16 pages.]

THE VEHICLE APRON AND HOOD CO. (Columbus, Ohio) have issued Price List No. 9 of storm fronts, aprons, and hoods for buggies and other vehicles, which they make in great variety, using rubber drill supplied from an important rubber factory. The business is very extensive, having existed for thirteen years, and now representing a capital of \$100,000. [3¾"×6¾". 52 pages.]

ALSO RECEIVED.

PILLEY Packing and Flue Brush Manufacturing Co. (formerly St. Louis Steel Wire Brush Co.) St. Louis—Packings, Flue Brushes, etc. 16 pages.

The Diamond Rubber Co., Akron, Ohio—[The Endurance Run as a Test of 1904 Diamond Tires]. 4 pages.



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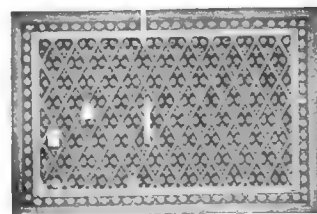
DETROIT, 80 E. Congress Street.

PHILADELPHIA, 922 Arch St.

SAN FRANCISCO, 392 Mission St.

LONDON, 7 SNOW HILL, E. C.

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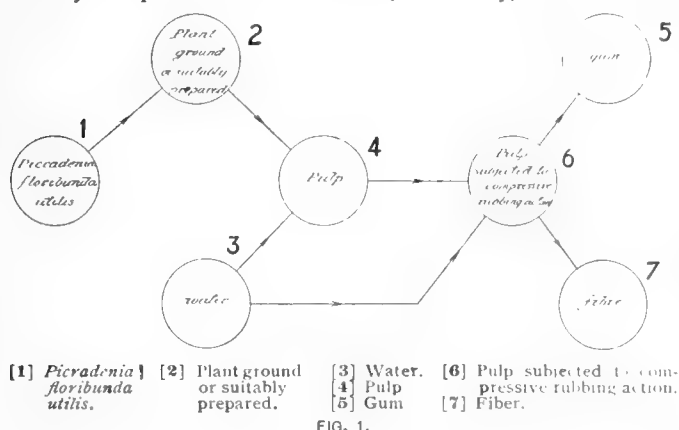
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BRANDS : :
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OLD GOLD,
SHAMROCK,
HIGH GRADE,
B-4-ANY,
GOOD ENOUGH,
BUCKEYE,
POPULAR,
WETMORE,
COMPETITION,
CLEVELAND,
EUCLID.

THE "PICRADENIA" AND THE GRAPHIC CHART.

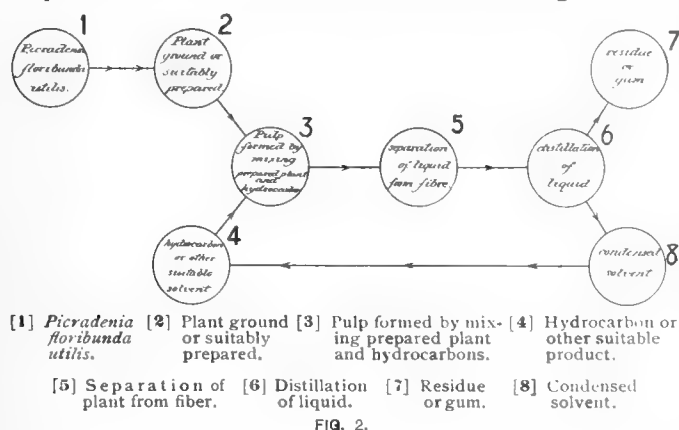
THREE United States patents granted recently—two of them to Myron G. Brownell, and one to Richard A. Leigh, both at present of Denver, Colorado—may prove of no little interest to rubber men.

The first patent granted to Brownell, No. 752,951, is for a *Rubber-like Gum*. In this he states clearly that he has invented—really invented—this gum. Some finicky people might claim that he merely extracted the gum, but let his words stand. The genesis of his invention appears to be the discovery in his locality of a plant or shrub known (not widely) as the "Colo-



rado rubber plant." This, according to a botanist to whom it was submitted, turns out to be the *Picradenia floribunda utilis*, and he adds that it contains considerable quantities of rubber in its roots. This plant is not to be confused with the *Picradenia Richardsoni*, the *Picradenia Brownelli*, or, the *Picradenia Leighhigh valleyi*.

Mr. Brownell takes the plant by force, dries it, powders it, puts it in a solution of, say benzine, to which is added a few drops of alcohol, which dissolves the rubber-like gum. The

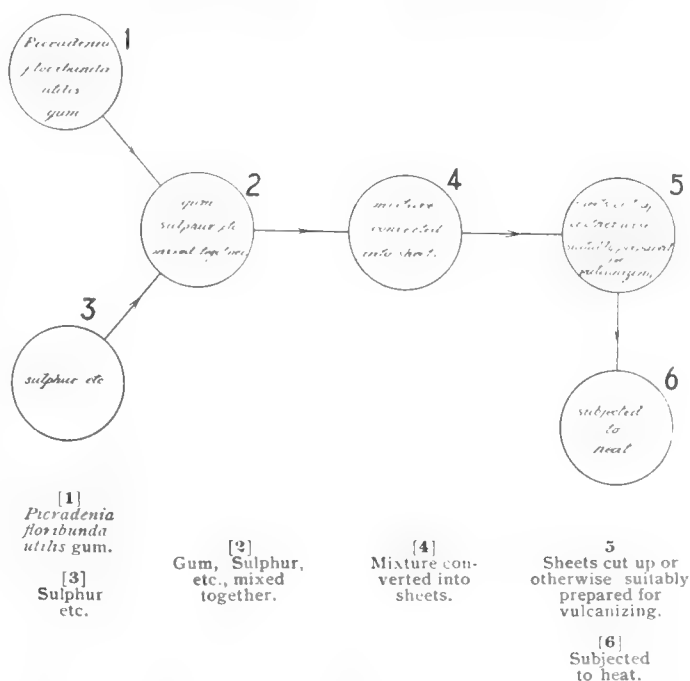


liquid is then separated from the plant fiber, is later subjected to distillation, leaving the gum in one receptacle and the solvent in another. The subjoined drawing or graphic chart (Fig. 1) graphically indicates the various steps of the process.

Further on Mr. Brownell says that while the process that he describes of recovering the gum has been found efficient, it is to be understood that he may employ any process which will serve to produce the gum from the plant *Picradenia floribunda utilis*. Therefore hands off from the *Picradenia*—and don't monkey with the *utilis*.

After affixing his signature in the presence of two witnesses, Mr. Brownell proceeds to spring on an awestruck world patent No. 752,952. Here he has a graphic chart (Fig. 2) as well as a picture of a machine, used as an aid in inventing the rubber-like gum. This process consists of the grinding of the plant, its mixture with water until a pulp is formed, a subjection to compressive rubbing action, and the separation of the gum and fiber by washing, and this delivers the gum *pure*, which is always a desideratum. The witnesses having come in about this time, Myron G. affixed his signature, and we turn to the third patent.

This is numbered 752,988 and is granted to Leigh, who assigns it to the Western Rubber Co., of Denver, Colorado. It is evident from the beginning that the graphic chart has got in its work on this inventor also, for he springs one on the reader at the first jump (Fig. 3). His invention, however, deals with the utilization of the gum; in other words he attends to the



utilis. Briefly described, he mixes it with "sulfur," sheets it, cuts it up or otherwise suitably prepares it for vulcanizing, and vulcanizes it! He makes hard or soft goods. He cures in dry or wet heats—and, like Brownell, he too, affixes his signature.

But what of the "Salad rubber plant?"

For years both of these discoverers must have known the *Lactuca sativa*, which contains rubber, not in its roots but in its broad succulent leaves. It is even more of a *utilis* than the *Picradenia*, for its leaves are edible. That it is commonly known as "lettuce" in no way interferes with its value as a possible rubber producer, or at least a producer of a rubber-like gum. Further than this, if edible solvents were used after the mixing chamber were reached, the product might follow one line of treatment and emerge as Pará rubber, or another and be marketed as lettuce salad. In order effectually to protect such a valuable process and interest sufficient capital to do the business on a large scale, it would be well to apply for a patent, illustrated by the subjoined graphic chart (Fig. 4.)

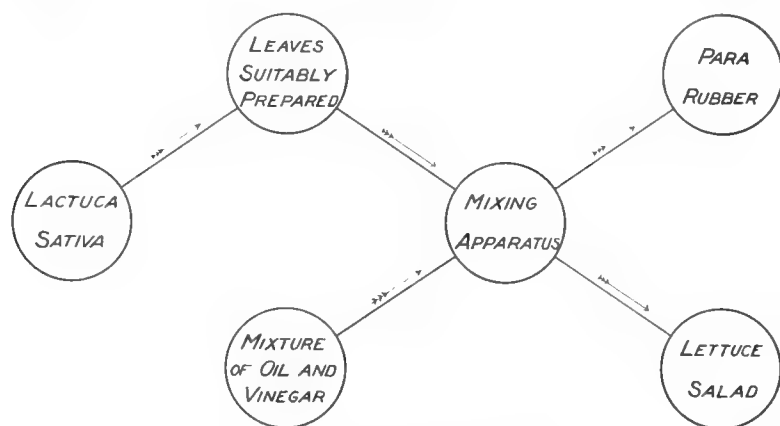


FIG. 4. [SEE PRECEDING PAGE.]

THE WONDERFUL COLORADO RUBBER PLANT.

[THE INDIA RUBBER WORLD disclaims responsibility for any of the statements which follow, in relation to the "Colorado rubber plant," said statements being compiled from various newspapers now on file in this office.]

In the issues of recent western newspapers may be found information regarding the "rubber weed," sufficiently varied to meet every taste. It abounds in Colorado, Utah, Arizona, and New Mexico. There is, in fact, no proof of its non existence in any given locality. It is described as "a variety of chico weed"; it is known locally in various regions as "sage brush," "rabbit brush," "cotton weed," "rag weed," and "poison weed" (because it is fatal to sheep). Botanically, is *Actinella Richardsoni*. Botanically it is also *Picradenia floribunda utilis*.

This plant grows in bunches about one foot high, and has a small yellow flower, somewhat like a daisy. It has several roots, the main one growing straight downward, about an inch in diameter and weighing about 4 ounces. "It looks like a worthless shrub." There are seven varieties of it. It grows 6 feet high. It frequently grows 15 feet high. When cut off at the root, it grows again to a greater size. "Some of the plants show a diameter of 4 feet and some of 8 feet."

The plant covers thousands of acres and long has been considered a nuisance. It was discovered less than two years ago by a prospector named Spencer, who, on losing his way, and becoming hungry, fell to chewing everything that came his way, with the result that he found that the roots of this plant contained a rubber like gum. Fifteen years ago John Beck, while a wealthy mine owner in Utah, found that the roots of this plant contained rubber, but he wasn't interested in rubber then. Later, his fortune gone, he remembered the rubber plant, and, being a chemist, thought it might be worth something. So, after a long search, he rediscovered it, and now he is getting up a million dollar company in Utah to make rubber from the plant. The stalks bear a fuzz which can be used as cotton; the bark yields a fiber resembling horsehair; the bark is also good as fuel; it yields tar paper and Japanese paper; the roots look like horseradish and stand well out of the ground; the roots are rich in potash; the flowers have medicinal properties; the seed pods yield camomile. The plant was discovered by C. M. Fueller, a Denver chemist. William Sunderland, the veteran metallurgist, chemist, and mining engineer, is the true discoverer of the plant, or of the valuable uses to which it may be put, and is amply fortified with papers to prove his claim.

The fact that the plant contains rubber was discovered by F. R. Marsh, a Denver promoter, who has organized the American Crude Rubber Co., with \$1,000,000 capital, to get the rubber out. The American Crude Rubber Co. have advertised that they own patents covering the product of the

Colorado rubber plant, as well as the process of making rubber therefrom. The Salida board of trade are dickering with other parties for the erection of a rubber extraction works. The American company wrote to the board of trade, calling attention to the patents, and received a letter in reply stating that it must be a "big bluff," and that the American company had "unlimited gall and nerve." The *Salida Mail* calls the holders of the patents "a conclave of confidence men," and says that the Salida business men "know a grafter when they see him." Meanwhile it is asserted that in New Mexico a factory is producing an excellent quality of rubber from this wonderful plant.

It is the greatest thing ever discovered. Gold mining is out of sight. Colorado is the richest country in the world. The new rubber will be ready in about 60 days.

RUBBER NOTES FROM EUROPE.

BRITISH RUBBER MANUFACTURERS' ASSOCIATION.

THE India Rubber Manufacturers' Association of the United Kingdom now embraces 28 manufacturing firms, including the most important in the country. The membership was increased by 3 firms within the past year. During the year several matters of general interest to the trade received the attention of the association, or of its officers or committees, and in respect to most of them satisfactory agreements were arrived at. For instance, certain restrictions on the carriage of rubber solution on railway trains were modified, and the rate reduced. Through the medium of the association, its members were enabled readily to act in concert in making the advances on the selling prices of their products rendered necessary during the year by the higher cost of raw materials. A committee of the association have lately had under consideration the subject of a mutual fire insurance scheme for rubber factories, and have decided upon a plan to report. The officers of the association this year are:

Chairman—FRANK PEGLER (The Northern Rubber Co.).

Vice Chairman—G. C. MANDLEBERG (J. Mandleberg & Co., Limited).

General Committee—RICHARD K. BIRLEY (Charles Macintosh & Co., Limited), JOHN COOPER (The Dermatine Co., Limited), J. E. HOPKINSON (J. E. Hopkinson & Co., Limited), F. W. INGRAM (J. G. Ingram & Son), PHILLIP H. LOCKHART (W. & A. Bates, Limited), DAVID MOSELEY (David Moseley & Sons, Limited), H. G. TIPPET (The Liverpool Rubber Co., Limited), JAMES TINTO (The Irvell and Eastern Rubber Co., Limited).

Treasurer—J. E. BAXTER (The Leyland and Birmingham Rubber Co., Limited).

Secretary—F. B. KNOTT, 2, Cooper street, Manchester.

FRENCH PNEUMATIC TIRE MANUFACTURERS.

A GENERAL meeting of the *Chambre Syndicale* of the French pneumatic tire manufacturers was held at Paris on February 9, at which the following officers were elected: President, Edmund Deitz; vice presidents, Louis Chauvin and Lucien Tronchin; secretary general, Valery Hermay; secretary, Maurin Tels; treasurer, Paul Treuil; recorder, Jules Gay. Committee: Falconnet, C. Gauthier, Worms, Rossmann, and Sussmann. The annual dues were increased from 12 to 20 francs. On motion of Messrs. Worms and Matanson the bureau of the syndicate chamber will negotiate with the French Automobile Club, in order to obtain an interest in the future *salons*. A court of arbitration, which is to be endorsed by the court of commerce was also elected, whose duty is the protection of the interests of the manufacturers of pneumatic tires.

THE RUBBER TRADE IN TRENTON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The strike in the rubber factories here, reported in this correspondence last month, is still in progress. As representing the attitude of the manufacturers in this connection, it may be worth while to quote a statement signed by them collectively, which appeared in one of the Trenton newspapers on March 20, as follows:

We, the following rubber manufacturers of the city of Trenton, hereby wish to make it known that we are not seeking a conference with any labor organization for the purpose of settling a strike, notwithstanding the fact that some newspapers of late have published statements to that effect.

We are running our mills to good advantage, having the usual force of men at work, and while applications from worthy ex-employees are receiving every possible consideration, yet on no account will the manufacturers discharge any of the men now at work to make room for men who went out on the strike.

The manufacturers desire to repeat that, as far as they are concerned, they consider that the strike is over, and further insist upon the right to pursue their business peaceably and according to their best judgment.

CRESCENT BELTING AND PACKING CO.
EMPIRE RUBBER MANUFACTURING CO.
EUREKA RUBBER MANUFACTURING CO.
GRIEB RUBBER CO.
HAMILTON RUBBER MANUFACTURING CO.
HOME RUBBER CO.
TRENTON RUBBER MANUFACTURING CO.
UNITED AND GLOBE RUBBER MFG. COS.
WHITEHEAD BROTHERS RUBBER CO.

It is fair to state that on March 22 a reply to the above statement, from the standpoint of organized labor, appeared also in the newspapers, signed by the committee having the strike in charge. The committee deny having sought, in their official capacity, to arrange a conference to arrange for ending the strike, though they did, as representatives of other bodies than the Rubber Workers' Union, interview certain rubber manufacturers, without result. The committee also say: "The statement that the mills are running as usual is untrue, and this fact is well known, though they have a few hands working." One of the signers of this communication is Thomas H. Flynn, a national organizer of the American Federation of Labor, with headquarters at Washington, D. C., who was summoned to Trenton by the Rubber Workers' Union and is now the official head of the strike.

* * *

W. J. HARNEY, financial secretary of the Rubber Workers Union, deserted the organization on March 5 and returned to work at the Whitehead mill. This had a depressing effect upon the strikers, and the manufacturers say led to many of the strikers asking for reinstatement. The leaders among the strikers claim that practically all the skilled workmen are holding firm. The union held its regular meeting on March 24 and at its close your correspondent was given this statement: "A motion was made to declare the strike off, but it was not even seconded. The meeting was largely attended and measures were adopted which will have an effect on the rubber industry of this city for years to come. All efforts for a conference having failed, the union decided to take aggressive action. Time will tell the results."

This is taken to mean that through the local Central Labor Union and the American Federation of Labor the factories here are to be placed on the unfair list and blacklisted all over the country.

A special meeting of the Rubber Worker's Union was held

on March 27, to consider the question of continuing the strike. After the meeting a statement was issued that about 400 members were present, and that the vote was overwhelmingly in favor of keeping up the strike.

* * *

THE Eureka Rubber Manufacturing Co. of Trenton have branched out into the manufacture of insulated wire. New machinery for this additional line has been installed and already ten styles of braided and glazed telephone wire are being made, besides several grades of rubber insulated wire for outdoor work. Manager Lambert reports the new department as successful and says a full line of insulated wire will be put on the market in a short time. The Eureka company are installing a new "Jumbo" mill and an additional 42 inch mill for friction calender work. These will make five mills that the company have installed since the opening of the factory a year ago. Two additional No. 4 Clark tubing machines have also been put in, making six the company now have in use. The factory is very busy.

* * *

THE De Laski & Thropp Circular Woven Tire Co., incorporated last June, report progress in experimenting with the tire as woven on the De Laski circular loom. Peter D. Thropp, an officer of the company, states that they expect to be ready to market the new tire by the middle of June. The company have got the manufacture of the tire to a satisfactory point, and are now making tests with regard to materials. The factory test given each tire consists in running it to the surface of a rapidly revolving wooden pulley with 800 pounds attached to the axle on which the wheel is running to give the required pressure, a 1200 mile run being given. Some prominent tire manufacturers have communicated with the company in regard to securing the circular woven fabric for use. Mr. Thropp said that arrangements might be made to supply other manufacturers with the fabric, but in any event the company here make complete tires.

* * *

TAKING of testimony in the suit of the Eureka Fire Hose Co. (Jersey City) against the Eureka Rubber Manufacturing Co. of Trenton, for an order restraining the latter company from using the word "Eureka" was completed before Vice Chancellor John R. Emory, in Newark, on February 24. The next step in the suit will be the argument on the evidence which will take place before the vice chancellor in Newark on April 4. The main points in the evidence as presented by the Trenton company in its defense was that it used the word "Eureka" only in its corporate name; therefore there was no infringement. As an argument in favor of the right to use this word in its title, counsel for the Trenton company cited the fact that 35 different companies have been incorporated under the laws of New Jersey with the word "Eureka" in the corporate titles.

* * *

THE suit of Colon Fulton against the Grieb Rubber Co., which was tried at the January term of Mercer court and in which Fulton was given a verdict of \$6800, has been appealed by the defendant company on the ground of no justification for the verdict. The date for the argument on the appeal has not been set. The plaintiff sued for damages for the loss of both hands which were crushed in the machinery at the Grieb mill where he was employed. The January trial was the third hearing of the case. The two former verdicts were set aside by the court.

* * *

THE Reliance Rubber Co. which was incorporated last spring, and which got its factory in shape for business last fall,

has been tied up for nearly two months by the ice and high water in the Delaware river. The mill is located on the river bank a short distance north of Trenton. The freshet of last October flooded the mill and caused a shutdown, and on top of that came the succession of freshets and ice floes of the past few weeks. It was particularly unfortunate because the factory was just getting under way. The mill is being cleared for action again and will be started up as soon as possible.

* * *

FORMER City Clerk C. Edward Murray, of the Empire Rubber Manufacturing Co. and the Crescent Belting and Packing Co., A. Boyd Cornell, secretary of the Empire company, and County Clerk C. Harry Baker filed an answer in the court of chancery on March 7, to the cross bill filed a short time before that by William H. Skirm, Jr. In his cross bill Mr. Skirm charged Messrs. Murray and Baker with attempting to defraud him of 50 shares of the stock of the Empire company which were held by the Mechanics' Bank of Trenton, as security for a note of \$3600 endorsed by Murray, and that Messrs. Murray and Baker secured the sale of the stock at forced sale to Mr. Cornell in trust for them. In the answer the defendants deny the charges, and allege that the purchase was a *bona fide* one on the part of Secretary Cornell, and that Messrs. Murray and Baker had nothing whatever to do with the transaction. Answering further, Messrs. Murray and Baker assert that Mr. Cornell, having been elected secretary of the Empire company, succeeding Mr. Skirm, desired to acquire some of the capital stock of the company. He therefore bid in the 50 shares that had been deposited by Mr. Skirm. Then, it is claimed, Mr. Cornell gave his note endorsed by Mr. Murray, in payment for the stock and deposited the new certificates issued to him as security for the note. No date has yet been set for argument in the case.

* * *

NINETY-ONE shares of the stock of the Empire Rubber Manufacturing Co. will figure in a suit to be brought by Pennington Seminary against William H. Skirm, its former treasurer, on the charge of misappropriating \$7650 of the school funds. At the time of General Skirm's failure it is alleged that he paid a local indebtedness of \$6000 with a check on the seminary funds, and to cover the payment of the school money discounted a seminary note in the bank at Millville, New Jersey. To secure this note, the seminary authorities allege that General Skirm deposited with the bank the stock in question. The known facts are that the bank holds the note against the seminary and the shares of stock as security.

* * *

FORMER Mayor Welling G. Sickel, vice president of the United and Globe Rubber Manufacturing Cos., has returned from St. Louis, where he made arrangements for his company to be represented there during the Louisiana Purchase exposition. No formal exhibit will be made, but the company has leased for the exposition period the home of Mrs. Louisa T. Averill, widow of the late A. M. Averill, and will use the handsome residence as a headquarters for the entertainment of the patrons and friends of the company who visit the fair. The residence contains eleven large rooms and is complete in all of its appointments. The home is located at the corner of Cabanne and Goodfellow avenues, within five blocks of the DeBaliviere gate to the exposition grounds.

* * *

THE Dyson Rubber Co., incorporated last fall, got their factory equipped and under way just before the holidays, and during the past month have got their business well established. At present the output of the company is limited to foot mats

of various grades and patterns, but an experiment with bottle mats has been a success and a line of these will be out on the market in a short time. Stair treads will be another specialty, and experiments are in progress for the manufacture of hoof pads and shoe soles. George A. Dyson, president of the company, was in Philadelphia the middle of the month to buy more material for the increase in manufacture.

* * *

THE Empire Rubber Manufacturing Co. are engaged on a large consignment of "Videto" cushion heels, for the Lincoln Rubber Co. (Boston). The distinguishing feature of this heel is a lift of sole leather riveted to the rubber which renders it easy to fasten it to the shoe. Secretary Cornell of the company reports trade as good and says the factory is busy catching up with the orders which accumulated somewhat at the beginning of the strike.

* * *

WILLIAM R. THROPP, local maker of rubber machinery, has just built and shipped two machines, a washer and a grinder, to the Keasby & Mattinson Co., at Ambler, Pennsylvania.

General Manager C. H. Oakley of the Grieb Rubber Co. states that the Grieb mill is unusually busy, and is running full handed with a night turn on.

Charles M. Dilts, secretary of the New Jersey Rubber Co., whose factory is at Lambertville, reports that the company are very busy and the factory is being operated night and day. He states that so far this year business has been extremely satisfactory.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: At a meeting of the shareholders of the Faultless Rubber Co. (Akron) and the Camp Rubber Co. (Ashland), held in the former city on February 27, the companies were consolidated, as foreshadowed recently in THE INDIA RUBBER WORLD, under the name of the Faultless Rubber Co., with the following officers: H. B. Camp, president; A. Vogt (Rochester, New York), vice president; T. W. Miller, treasurer and manager; C. E. Campbell, secretary. The directors are Messrs. Camp, Vogt, and Miller, and George D. Bates and H. E. Address. J. D. Slater is superintendent, and W. H. Muschlet, salesman. The stock of the two companies was owned by the same people, and President Camp states that the consolidation was effected for the purpose of centralizing the work of the office forces, making it possible to conduct the business on a more economical basis. This consolidation signalizes the success of Mr. H. B. Camp in the rubber business. A few years ago he was known among business men as the owner of one of the largest building tile industries in the country, located near Akron. Having made a fortune in this line, he went into the rubber business. He began on a small scale with the Faultless Rubber Co. of Akron, but it was not long until the business had grown so that it was necessary to make an addition to the plant. This was done, and shortly after, he determined to start a factory in Ashland. Mr. Camp at that time was president and owner of the Ashland and Wooster railway, and was interested in Ashland to some extent. He organized the Camp Rubber Co. and started a plant in Ashland, one of the principal articles of manufacture being rubber cushions for a patent horse collar. In time this business also became extensive, and at this time the factory at Ashland is kept very busy. Only recently it was decided by the owners of the American Horse Collar Co. of Holland, Michigan, to remove to Ashland in order to have the plants

of the two companies together. The Camp Rubber Co. is now one of the principal industries of Ashland, and the Faultless Rubber Company of this city, while not as large as some of the companies which carry on the manufacture of tires, is an important concern, and growing rapidly. Under the able management of Mr. T. W. Miller, it has developed into one of the best paying rubber plants in Akron.

* * *

JUDGE HAYDEN, sitting in the court of common pleas of Summit County on March 6, rendered a decision, which, if sustained by the higher courts, will allow Harvey L. Miller to examine the books and records of the Miller Rubber Manufacturing Co. at his pleasure. The troubles of Mr. Miller in connection with the Miller company are of long standing. At the present time a suit is pending in common pleas court here against Mr. Miller, filed by Mr. Jacob Pfeiffer, Jr., president and treasurer of the Miller company, in which he seeks to have stock in the Miller company now held by Mr. Miller, returned to the company. Mr. Miller filed a suit against the local company, alleging that he is unable to see the books of the company, although he is the holder of 189 shares of their capital stock. His contention was sustained by Judge Hayden, who held that he has a perfect right to see the books, and that the company have no right to prevent him from doing so. The company will carry the case to the circuit court.

* * *

THE long delayed orders for automobile tires are at last beginning to come in, and tire manufacturers expect to be very busy from this on to the end of the season. As has been previously stated in THE INDIA RUBBER WORLD, the selling pool of the tire manufacturers resulted in a backward season, owing to the agreement to change the policy of credits on tires. Automobile manufacturers who in the past began to lay in a supply of tires in January, refused to do so under the terms of the selling pool, and as a consequence the tire business so far this year has been practically at a standstill. It is now beginning to pick up, and it is expected that from this time the tire makers will be very busy. The present high prices of crude rubber will make it imperative, the tire manufacturers say, to increase the price of tires if a profit is to be made on them. So far there has been no advance in the price of tires. The prices of other rubber goods still remain the same, but it is hinted that they will be advanced soon unless the price of crude rubber drops.

* * *

THE St. Mungo Manufacturing Co., of England, who formerly manufactured the Kempshall golf ball in England, have entered into an agreement with the Haskell Golf Ball, of Akron, by which they have become licensees of the Haskell ball. Mr. B. G. Work, of the Haskell company informs THE INDIA RUBBER WORLD that this is the case. The business of the Haskell company is increasing in a manner that is most pleasing to the company, and the litigation over patents has been amicably adjusted.

* * *

THE first annual report of the secretary of the Employers' Association of Akron, Ohio, and vicinity, shows a growth in membership from 29 to 92 firms, including representatives of practically every industry in Akron, and firms employing on an average about 10,000 hands. The report expresses satisfaction with the work done by the association, in bringing about a better understanding between employers and employes in a number of cases where trouble was threatened. Since the association was formed a national organization, on similar lines, has come into existence, with which the Akron association is now affiliated.

At a meeting of the directors of the Second National Bank, of Akron, on March 1, Colonel George T. Perkins retired from the office of president, in favor of Mr. Henry Robinson, but he remains a member of the board. The reasons for this step were suggested in the last INDIA RUBBER WORLD. Colonel Perkins continues, of course, in the presidency of The B. F. Goodrich Co.

Mr. C. C. Goodrich, assistant superintendent of The B. F. Goodrich Co., is having in course of construction a 30 HP. automobile of novel design, which he had planned, by the Smetzer Automobile Co., of Akron.

Mr. B. G. Work, vice president of The B. F. Goodrich Co., and his wife have returned from an extended trip in the south.

THE RUBBER TRADE IN CHICAGO.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Weather conditions continue to interfere with rubber dealers in the middle west. The tire men are simply resting on their oars, waiting for good roads and pleasant weather to open up the automobiling season, while those handling garden hose and similar lines, are hoping for an early and dry summer. Both the tire men and the rubber hose dealers say that while the outlook is for an exceptionally heavy season when once it opens up, the bad weather has delayed shipments for a month to six weeks.

Among the Chicago rubber men the only branch of the trade that shows any unusual activity is that handling the rubber and combination footwear. The shoe men have been enjoying a harvest the like of which they have not seen in twenty years in this section. The weather conditions, while not so conducive to a heavy trade during January and the early part of February, have been almost ideal for a heavy trade since the middle of February. The heavy snow which had covered the ground for nearly ten weeks began to melt, and when there is a thaw in Chicago rubber boots and overshoes are the only things that will insure dry feet, and frequently the overshoe proves inadequate because of the overflowing gutters and sewers. No sooner had the second snow melted than heavy and almost daily rain set in and the accumulations of mud made the streets all that could be desired from the rubber shoe dealers' point of view.

But the continued high price of cotton duck and of crude rubber is still causing consumers of mechanical rubber goods to hold back. They cannot get the notion out of their heads that this high price is only the result of manipulation in the cotton market, and that with the downfall of Sully prices will decline. Local manufacturers and manufacturers' agents failed to overcome this, and hence the last two months have been exceedingly quiet ones in those lines.

Western manufacturers generally have been quietly shoving up prices to offset the big advance in raw material. The local representatives declare that so far they have been exceedingly successful in this effort to raise prices. This is done on new contracts, and the increase varies from 10 to 20 per cent.

R. T. Whelpley, manager of The B. F. Goodrich Co. (Akron) declares that unless the summer is far different from what is expected, this will be one of the greatest seasons for the sale of garden hose and that class of goods Chicago dealers have had in many years. Orders on the waiting list indicate that the volume of the garden hose business for the coming season will exceed any previous year. The last two years have been exceptionally wet, and hence poor ones for this trade. This year everyone is counting on a dry season, but just why none are able to say.

NEWS OF THE AMERICAN RUBBER TRADE.

DINNER OF MECHANICAL GOODS MANUFACTURERS.

A CALL has been issued for a meeting of manufacturers of mechanical rubber goods, the officers of such companies and employes holding official positions, at the Savoy Hotel, Fifty-ninth street and Fifth avenue, New York, on the evening of Thursday April 21, at 6.30 o'clock. The program includes a dinner to be served at 7 o'clock promptly, followed by brief addresses by well known rubber manufacturers, on topics that are of special moment to that branch of the trade. This call is the result of many informal meetings of various members of the trade, which have finally resulted in the formation of a committee empowered to arrange for the meeting and for the dinner. The committee appointed are among some of the younger and more active men connected with the New York mechanical goods trade who are working with the cordial assent and support of both the older and the younger element. The committee who signed the circular calling for the dinner are, William Hillman, President New York Revere Rubber Co., J. J. Voorhees, President Voorhees Rubber Manufacturing Co., and A. F. Townsend, President Manhattan Rubber Manufacturing Co., Mr. Hillman occupying the position of secretary *pro tem*.

PENNSYLVANIA RUBBER CO.

At the annual meeting at Jeannette, Pennsylvania, on March 17, the following officers were elected for one year: Herbert Du Puy (Pittsburgh), president; Frank A. Wilcox, vice president and general manager; H. W. Du Puy (Pittsburgh), treasurer; George W. Shively, secretary. The directors are H. W. Du Puy, F. A. Wilcox, and H. W. Du Puy. The company was reported to be in a most prosperous condition, and all the stockholders present expressed themselves as being pleased with the manner in which the affairs have been conducted in the past year. The business outlook for the coming year is very encouraging, there being plenty of orders on hand to keep the plant busy for some months to come, with new orders coming in.

REMODELING A RUBBER FACTORY POWER PLANT.

The Canadian Rubber Co. of Montreal recently remodeled their power plant and found that the tall brick chimney, 110 feet high, would not give the proper amount of draft necessary in connection with the four new Stirling boilers they were to install. Mechanical draft was necessary and for this purpose a large Sturtevant steel plate fan driven by a Sturtevant horizontal engine was installed, and now the proper amount of draft is easily attained and regulated at will, regardless of the weather conditions. This installation is another illustration of the necessity of mechanical draft, especially in connection with the remodeling of old boiler plants.

THE BELTING AND PACKING COMPANY TO MOVE.

The New York Belting and Packing Co., Limited, will remove on May 1 from their present place of business, No. 25 Park place, New York, to more commodious quarters at Nos. 91-93 Chambers street. The concern has been cramped in its present location and is making the change on that account. In the new place it will occupy about twice as much space and will fit up a very handsome establishment. The new quarters will include ground floor space 50 x 150 feet, with two cellars of the same size, running through from Chambers to Reade street. The place is now in the hands of the company's archi-

ects and will be elaborately fitted up and decorated. The New York Belting and Packing Co. moved to the building they are now leaving in 1900, after having been on Park row since 1846. The original location was at No. 38 Park row, at the corner of Nassau street, but after having been burned out there the company located at Nos. 13-15, on the same street, where they remained until the great Park Row office building was projected four years ago. In the new place the offices and sales departments will be at the Chambers street end of the building, while the shipping will be done from Reade street.

WHY THEY WILL NOT EXHIBIT AT ST. LOUIS.

It is generally known that the Rubber Goods Manufacturing Co. planned at one time to make a very elaborate exhibit at the St. Louis Fair, but just why they did not carry out their plans has not until lately transpired. President Charles H. Dale, with his usual frankness, made no secret at all of his reasons.

"We had contracted for several thousand square feet of space," he said, "and were going to spend some \$10,000, showing the goods of all of our sixteen companies, but things were not made at all easy for us. In the first place, the management wanted to put 'Rainbow' packing on all of their bearings and have it free. As it would take several tons, I simply told them that we didn't have to seek that sort of advertising and that they would better pick out some packing not as well known. After that we didn't seem to be able to make much progress. Finally I insisted on finding out why we could not finish our exhibits as others had, and was politely told that we would have to wait until all of the foreign exhibits had been put in place. So I promptly withdrew our exhibits. Oh yes! publish it if you like; I have all the documents necessary to prove what I say."

THE VICTOR RUBBER CO. (SPRINGFIELD, OHIO.)

MENTION was made in these pages last month of a change in management of the above company. The new officers are: G. G. G. Peckham, president; A. G. Marshall, secretary; C. H. Marvin (of W. H. Marvin & Co.) treasurer. THE INDIA RUBBER WORLD is advised that, having increased their capital to \$600,000, the company propose to enlarge their factory and triple their present capacity.

NEW ENGLAND RUBBER CLUB "SMOKE TALK."

At the annual meeting and election of officers of the New England Rubber Club, which is to be held at the Massachusetts Automobile Club No. 751 Boylston street, Boston, on Monday, April 18, Mr. Henry C. Pearson, secretary of the Club, will give a description of his visit to the island of Ceylon and the Straits Settlements, in pursuit of more definite knowledge regarding the plantations of Pará rubber now being installed there on a large scale by British capital. The talk will be illustrated by more than a hundred stereopticon views made especially for the occasion. The Club are to gather at 7.30 P. M., light refreshments being served at the conclusion of the lecture.

THE SPRINGFIELD RUBBER TIRE CO.

THE Springfield Rubber Tire Co. (New Haven, Connecticut—with branches in several cities), who have been engaged in selling rubber tires, principally in New England, for the past seven years, are now having made for them a special line of solid and cushion tires which they are marketing as their own.

They are widening their market, through the employment of several experienced salesmen, with a view to a thorough canvass of the carriage and wagon trade of the United States. C. E. Miley is president of the company, and E. J. Todd, secretary.

REMOVAL OF THE MERCHANTS' RUBBER CO.

THE Merchants' Rubber Co. have removed from their old quarters, No 72 Reade street to a handsome new establishment at No. 139 Duane street. The business of the concern had expanded to such an extent that it was seriously cramped in the old location. The new store has double the floor space of the old, and is being fitted up in a very attractive manner. It extends through from Duane street, 185 feet to Thomas street. The store proper, on the first named street, is 25 feet wide by 85 feet deep while the Thomas street side is 75×100 feet, and in addition there is a deep basement under the entire place. The salesrooms are fitted with modern display fixtures and conveniences which the shipping department and stock room will be in the rear. Mr. William Morse, the president of the company, says that he will have space to handle 22,000 cases of rubber shoes at one time and he has fixed shelving where he can handle 2800 broken cases assorted in sizes. The convenience and advantages of the new store aside from completeness of its sales equipment are that all receipts and shipments are made from the rear, and the store proper is merely a sample room.

THE MACKINTOSH TRADE.

A PROMINENT New York jobber in mackintoshes and raincoats says in regard to that line: "The trade during the past season has been better than ever, taking it as a whole. The demand for heavy rubber surface coats is larger than ever, and the demand for cravenettes or raincoats is growing almost more rapidly than it can be kept up with. The call for mackintoshes has fallen off, which is due undoubtedly to the increased use of the raincoat. As these latter garments sell for about twice as much as the former, the sales run up into money very much more rapidly."

CANADIAN RUBBER CO. OF MONTREAL.

AT the annual meeting of the shareholders, on March 10, the following directors were reelected: H. Montague Allan, J. B. Learmont, C. F. Smith, H. Markland Molson, Lieutenant Colonel F. C. Henshaw, Alfred Piddington, A. A. Allan, and Hugh A. Allan, and Lieutenant Colonel Prevost was elected in place of J. O. Gravel. At a subsequent meeting the officers were reelected, as follows; H. Montague Allan, president; J. B. Learmont, vice president; E. A. Wright, secretary-treasurer; D. Lorne McGibbon, general manager. Reports submitted to the shareholders made a favorable showing in regard to the year's business, the volume of which, indeed, is understood to have exceeded expectations.

NAUGATUCK RUBBER FACTORIES BUSY.

THE rubber industry of Naugatuck, Connecticut, which is the main support of the town, was never in a better condition than at present, the local factories being taxed to keep pace with the orders. The *Waterbury American* says: "Fifteen years ago the idea of a rubber factory running the year round was considered absurd, and the help in those days considered themselves lucky to get ten months' work out of the twelve. But times have changed, and the local factories have now been running steadily for the past three years with a good outlook for 1904. This period of general prosperity is shown in many ways, for during the past year the building of new dwellings has barely kept pace with the increasing demand for tenements, and there is scarcely a vacant tenement to be found in the borough; and any doubt as to the increasing prosperity of

the people of the town can be set aside by any who care to watch the stream of depositors who visit the savings bank every Wednesday evening."

END OF A STRIKE IN A MACINTOSH FACTORY.

THE month began with a strike in progress in the factory of the Union Rubber Co., waterproof garment makers, No. 113 Purchase street, Boston, over a demand for increased wages. The strikers had the support of Boston Rubber Garment Workers' Union, No. 174. On March 17 the strikers returned to work, after a conference at which concessions were made on both sides.==Four members of the garment workers' union, including the president, Harry Nuremberg, have been expelled for going to work for the Union Rubber Co. while the strike was still in progress, and while they were on a committee to confer with the company on matters relating to the strike.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Feb. 17	150	12	12	860	47 ³ / ₄	46
Week ending Mar. 5	2,515	13	11 ³ / ₈	1,660	48 ³ / ₄	47 ³ / ₄
Week ending Mar. 12	600	12 ⁵ / ₈	12	3,822	49 ³ / ₄	47 ¹ / ₂
Week ending Mar. 19	2,020	13 ¹ / ₂	12	2,635	52 ³ / ₈	49
Week ending Mar. 26	2,495	13 ⁷ / ₈	13	3,040	51 ¹ / ₂	52 ¹ / ₂

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Feb. 27	1,910	19 ³ / ₄	18 ⁷ / ₈	42	79 ¹ / ₂	78
Week ending Mar. 5	3,660	19 ⁷ / ₈	19	71	79 ¹ / ₂	78
Week ending Mar. 12	1,000	19	18 ¹ / ₄	315	76	75
Week ending Mar. 19	1,960	19 ¹ / ₂	18 ¹ / ₈	150	76	76
Week ending Mar. 26	2,250	20 ¹ / ₄	19 ¹ / ₄	428	79 ³ / ₄	77 ¹ / ₂

THREE MORE ALLING RUBBER STORES.

EARLY in the month a retail rubber goods store was opened at New London, Connecticut, under the name Alling Rubber Co. This is the seventh of the Alling rubber stores in Connecticut. But this store, like the one at Norwich, is owned by Wilbur S. Alling, of that town, and not by a corporation.==About April 1 the Alling Rubber Co. of Hartford (consisting of Noyes E. Alling and Amos P. Mitchell) will open a rubber store at New Britain, Connecticut, under the management of William Keane, employed hitherto at the Hartford store.==The Alling Rubber Co. have opened a retail rubber in New London, Connecticut, at No. 158 State street, making the eighth Alling rubber store in the state.

BENEDICT REIS IN BANKRUPTCY.

[See THE INDIA RUBBER WORLD, February 1, 1904—page 174.]

IN the New York supreme court on March 24 Isaac Lehmann was appointed permanent receiver of the assets of B. Reis & Co., who did business as the Neptune Rubber Co., manufacturers of waterproof garments, No. 23 Lispenard street, New York. Mr. Lehmann was appointed temporary receiver on January 13. A motion that Lehmann turn over the property in his hands to E. B. Hamlin, the receiver appointed in the United States district court, has been denied by Judge Holt, of the latter court, and the business will be wound up by Mr. Lehman. The whereabouts of Bernard Reis has been unknown since early in January. There are 29 creditors on the list, whose claims aggregate \$17,102, the principal ones being for cloth and waterproofing.

NEW OFFICES OF THE UNITED STATES RUBBER CO.

THE United States Rubber Co. have just moved their New York offices into the magnificent new twenty story office building at No. 42 Broadway—the largest office building on that thoroughfare. The offices of the company have been situated for the last six years in the Franklin building, Nos. 9-12 Murray street, where they occupied three floors. These quarters were ample for a time, but, owing to the large increase of business they have during the last two or three years been growing more and more inadequate. The company have for some time been looking for more spacious offices, and finally decided to take the entire twelfth floor of the new building above mentioned. It has a frontage of 115 feet on Broadway and runs back 200 feet to New street, the rear of the building being in the form of two wings, with an intervening court. The unusual amount of floor space in this building enables the company to have all their departments on one floor. The east end of the southern wing is devoted to offices and meeting rooms for the directors and executive committee and officers of the company. These rooms, very handsomely finished in antique oak, are furnished entirely in mahogany. The view from these offices, looking over East river and across Brooklyn, is particularly fine. Next to the directors' rooms come the general purchasing and crude rubber departments. The north wing is devoted to the selling department, Mr. Paine, Mr. Armstrong, and Mr. Rice having private offices at the extreme eastern end, the rest of this wing being occupied by the transportation and advertising departments, and by various other members of the selling organization. Between these two wings, opening on the court, but also looking out across the East river, the assistant general manager, Mr. Sawyer, has a suite of offices for himself and his assistants. The greater part of the Broadway side is occupied by the treasurer's department. The view from these front windows is superb, being entirely uninterrupted and looking across North river, Jersey City, and westward indefinitely—a very suitable situation, as it will enable Mr. Watson, whenever collections are slow, say in Idaho or Nebraska, to step to the window and see what the trouble is. The auditing department has the northwest corner, with a great wealth of windows facing west and north and, on a small court, to the east, so that even the bookkeeper in the remotest corner will not only have all the light he wants, but the particular kind of light that he may prefer. The building has twelve elevators, six "express" and six "locals," so that the twelfth floor has the best elevator service in the building. In addition to providing large and commodious offices for the entire organization, generous provision has been made for the convenience and comfort of out of town customers, who will find not only desk room and conference rooms at their disposal, but the best possible telephone and messenger service and other facilities to which they will all be made most welcome.

MARION INSULATED WIRE AND RUBBER CO.

THE factory of this new company, at Marion, Indiana, is about completed, and some of the departments are already in operation, but they have yet some machinery to install, on account of delay in obtaining the same from the makers. The company advised THE INDIA RUBBER WORLD late in March that they hoped to be in full operation within 30 days.

INTERNATIONAL RUBBER MANUFACTURING CO.

[See THE INDIA RUBBER WORLD, March 1, 1904—page 213.]

AT a meeting of creditors of this company, at Hoboken, New Jersey, on March 14, in bankruptcy proceedings, William T. Baird, who on December 7 last had been appointed receiver for

the company, was duly elected trustee in bankruptcy, and accepted the trust. It has since ordered by the New Jersey court of chancery that on April 4, at 10 A. M., at No. 15 Exchange place, Jersey City, the creditors and shareholders of the corporation show cause, if they have any, why an order should not be made directing William T. Baird as receiver to present his account and report, and be discharged as receiver, the residue of the assets to be turned over to William T. Baird as trustee in bankruptcy.

CONSOLIDATED RUBBER TIRE CO.

THE company's earnings for the year 1903 were sufficient to permit of the payment on April 1 of 1½ per cent. on their outstanding 4 per cent. debenture income bonds, through the Manhattan Trust Co. (New York), agent for the bondholders under the agreement of April 1, 1901. The annual meeting of the shareholders will be held on May 2.

NEW INCORPORATIONS.

THE Falcon Rubber Co. (New Haven), February 29, 1904, under Connecticut laws, to manufacture druggists' and surgical rubber goods; capital, \$60,000. Organization effected March 3. *Directors:* Patrick J. Cronan, Lewis C. Warner, Andrew R. Bradley, Francis P. Bush, Benjamin L. Coe, Frederick S. Ward, Charles E. Langdon, Dennis B. Martin, and Albert C. Coe. *Officers:* Albert C. Coe, president; Francis P. Bush, treasurer; Charles E. Langdon, superintendent; Dennis B. Martin, manager of sales. Mr. Coe has been connected for 18 years past with L. Candee & Co., rubber manufacturers, of New Haven, in executive positions. Mr. Bush has been identified with important manufacturing interests. Mr. Langdon is also a practical rubber manufacturer, who was for some years connected with the Seamless Rubber Co. (New Haven), manufacturers of druggists' sundries. Mr. Martin is well equipped for the position of sales manager through his wide acquaintance with wholesale trade.

=The Davie Rubber Co., Inc., February 17, 1904, under New Jersey laws, to make and deal in rubber horseshoe pads; capital, \$20,000. Succeeds the firm of Davie & Co., patentees of the Davie hoof pad, Camden, New Jersey. *Officers:* Hewlings Lippincott, president; H. F. Davie, vice president; Robert M. Lippincott, secretary and treasurer.

=New York Pneumatic Horse Collar Co., February 23, 1904, under New Jersey laws; capital \$200,000. Incorporators: Alexander Hamill, No. 130 East Twenty-third street, New York; George W. Flaacke, Jr., and A. Livingston Norman, lawyer, No. 25 Broad street, New York. Registered office in New Jersey, No. 1 Montgomery street, Jersey City. Messrs. Flaacke and Livingston have been identified hitherto with companies incorporated in New Jersey to exploit the rubber horse collar patent at one time controlled by the United States Pneumatic Horse Collar Co., an unsuccessful enterprise.

=Nelson Crosskill Corporation (Danvers, Massachusetts), February 19, 1904, under Massachusetts laws, to manufacture rubber cements; capital, \$5,000. Incorporators: Nelson Crosskill, Wellesley, Mass.; George W. Kent, Providence, R. I.; William L. King, Somerville, Mass.

Maine Rubber Shoe Co. (Portland, Maine), March 26, 1904, under Maine laws; capital, \$10,000. Objects, to deal exclusively in rubber footwear made by the Hood Rubber Co. *Directors:* W. H. Given, George E. Bird, A. C. Berry, and J. H. Parsons. The president and treasurer and manager of the company is W. H. Given, for some years connected with the Pacific coast trade of the Boston Rubber Shoe Co., and later with the enterprise Rubber Co. (Boston). The address of the Portland store is Nos. 82-92 Gross street.

=Elliott Manufacturing Co., February 23, 1904, to manufacture golf balls and rubber goods; capital authorized, \$125,000. Incorporators: Charles B. Elliott, Eva C. Elliott, and Joseph B. Wright. C. B. Elliott is president and treasurer and J. B. Wright secretary. The company have acquired a factory at Menlo Park, New Jersey, and are prepared to make dress shields, hospital sheeting, dental dam, Gutta-percha tissue, and the "Elliott Get There" golf ball—a low priced rubber cored ball. Registered office: No. 43 Paterson street, New Brunswick, New Jersey.

=State Rubber Co. (Boston), February 27, 1904, under Massachusetts laws; capital, \$50,000, of which \$40,000 preferred and \$10,000 common. Officers: Stoughton Bell, Cambridge, president; William J. O'Donnell, Boston, treasurer; J. M. P. Wallner, Boston, clerk. Mr. Bell informs THE INDIA RUBBER WORLD that the company's plans are not ready for announcement to the public.

=First Rubber Co. (Chicago), March 16, 1904, under Illinois laws, to manufacture rubber goods; capital, \$10,000. Incorporators: William C. Boyden, Willard Moffett, and Robert S. McClure.

=Maryland Rubber Co. (Baltimore), March 16, 1904, under Maryland laws, to do a general business in dealing in rubber goods; capital, \$25,000. Incorporators: Samuel H. Jones, William M. Harman, Jr., George A. Eldridge, Charles G. Baldwin, and Rignal W. Baldwin.

=Potomac Rubber Co. (Baltimore), March 14, 1904, under Maryland laws, to deal in rubber goods; capital, \$1000. Incorporators: Silas M. Fleischer, Abram J. Ulman, Edwin S. Drexel, Julius H. Wyman, and Robert E. Gerhardt.

=General Rubber Co. (Newark, New Jersey), March 25, 1904, under New Jersey laws, to manufacture rubber goods; capital, \$2,000,000. Incorporators: Edward A. Day, Morristown; William D. Kellogg, Elizabeth; and Jerome T. Congelton, Newark—all in New Jersey.

=Elmira Rubber Co. (Elmira, New York), March 25, 1904, under New York laws, to deal in boots and shoes and rubbers; capital, \$10,000. Incorporators: John Keefe, M. H. Murphy, and M. A. Kelly—all of Elmira.

TRADE NEWS NOTES.

THE Republic Rubber Co. (Youngstown, Ohio) announce the successful test of their "White Shield" brand of fire hose by the fire department of New York city. The announcement refers to the 49,100 feet of hose sold to the city as reported in THE INDIA RUBBER WORLD January 1, 1904 (page 137). The company advise that though the specifications required by the city were unusually exacting, their "White Shield" hose stood the tests in every detail as to cover, duck, friction, and brand.

=Replying to inquiries regarding the ultimate disposal of the Cable Rubber Works, recently bought by L. C. Chase & Co., the company state that they will undoubtedly take the machinery out and have it installed at their factory at Reading, Massachusetts, after which the buildings of the Cable company will be put on the market.

=Charles W. Harris, having disposed of his interest in the Milwaukee Rubber Works Co., has taken charge of the carriage tire department of The Republic Rubber Co. (Youngstown, Ohio). It is understood that business prospects in this department are very encouraging.

=The Goshen Rubber Works (Goshen, Indiana) on March 2 filed with the secretary of state of Indiana a certificate of increase of capital from \$100,000 to \$200,000, in accordance with the plan adopted at their last annual meeting and reported in THE INDIA RUBBER WORLD of December 1, 1903 (page 97).

=The Boston Woven Hose and Rubber Co. have recently built a large addition to their brass foundry, to take care of their increased business on couplings, nozzles, and hose fittings. With the addition of several new turret lathes and automatic machines, they are now in a position to make prompt delivery on all spring orders.

=The Standard Underground Cable Co. (Pittsburgh) during the last few years have laid many miles of underground cable in Baltimore, for various telegraph and telephone companies and the street railways. The various installations are referred to as having been uninjured by the recent disastrous Baltimore fire, except in cases where exposed ends of cables were injured.

=L. Candee & Co. (New Haven, Connecticut), it is reported, will close their factory on March 31, for the purpose of installing new engines, which work, it is estimated, will require about four weeks.

=A pending suit is that of the Hartford Rubber Works Co. v. Pennsylvania Rubber Co., for alleged infringement of United States patent No. 631,803, granted August 29, 1899, to Frank Mallalieu, for the "manufacture of inflatable tubes." It is applicable particularly to tire inner tubes, and covers the "dog's ear" or envelope fold form of tube. It is reported that the case will be settled out of court.

=J. C. Wilson has resigned as president of The India Rubber Co. (New Brunswick, New Jersey), and at last accounts his successor had not been elected.

=F. H. Turner resigned as treasurer of the Hartford Rubber Works Co., on March 15, to become president of the Standard Foundry Co. of Hartford. William H. Seward, Jr., factory manager of the Hartford Rubber Works Co., has been chosen treasurer to succeed Mr. Turner, and will discharge the duties of both positions.

=The Philip Carey Manufacturing Co. (Lockland, near Cincinnati), will, it is reported, make a considerable addition to their already large asbestos goods factory, in view of the increasing demand for their fireproof products. The new factory will be devoted to asbestos roofing.

=The latest advertising novelty designed by Mr. John P. Lyons, this time calling attention to the Candee rubbers, is the likeness of a beautiful girl swinging in a very comfortable appearing hammock. That the illusion may be more perfect, the poster is mounted on card board so that the hammock may be swung in any office, where its fair occupant calls attention to the merits of the goods advertised.

=The copartnership existing hitherto under the name of the Elastic Tip Co., at No. 370 Atlantic avenue, Boston, has been dissolved. The business will be continued under the same style by George R. Stetson, one of the partners.

=A. N. Hammerstrom, former purchasing agent of the Simmons Hardware Co. (St. Louis), has accepted the position of business manager of the Trenton Rubber Manufacturing Co. (Trenton, New Jersey).

=Mr. William J. Gorham, president of the Gorham Rubber Co. (San Francisco), is now in Japan, presumably to secure from the Japanese government a goodly share of the orders for rubber blankets and other equipment that the war has developed.

=Arthur C. Squires, of Akron, Ohio, is not now connected with any rubber manufacturing concern, but has placed himself at the service of the whole rubber trade as consulting expert in general lines.

=The Indiana Insulated Wire and Rubber Co. (Jonesboro, Indiana) are reported to have shipped lately a good sized lot of telephone cable to Japan, and a ton of rubber insulating tape to each of the ports of Berlin, Paris, and Alexandria (Egypt).

=The Dayton Rubber Co. (Dayton, Ohio) have been busy for some time past installing machinery, and when the work is complete they expect to have one of the best arranged mechanical rubber goods plants in the country. It is understood that already they have some encouraging orders in hand.

=The rubber firms included in the membership of The Motor and Accessory Manufacturers, organized at Cleveland, Ohio, on March 2, are The B. F. Goodrich Co., the Diamond Rubber Co., Hartford Rubber Works Co., Fisk Rubber Co., Morgan & Wright, G & J Tire Co., and the National Cement and Rubber Manufacturing Co.

=Harrison C. Frost, who for some time past has been connected with the Quaker City Rubber Co. (Philadelphia), has severed his connection with that firm.

=The Brown Shoe Co. (St. Louis) have called a meeting of stockholders to increase their capital stock from \$1,000,000 to \$2,500,000. This will make it the largest capitalized shoe company in the world. The great popularity of their "Star 5-Star" shoes and rapid increase of \$1,500,000 per year in business requires this large capital. In December last the company celebrated their twenty-fifth anniversary.

=The Bowers Rubber Co. (San Francisco), are running their factory overtime to catch up with the press of orders that have been booked in the past few months.

=W. F. Ridge, some time in the factory of Morgan & Wright (Chicago) and more recently general foreman of the tire department of the International Automobile and Vehicle Tire Co. (Milltown, New Jersey), has accepted a like position with the Goshen Rubber Works (Goshen, Indiana), who are now planning to extend their work in tire lines.

=The National India Rubber Co. (Bristol, Rhode Island) are mentioned as having a good trade for their insulated wire, for electric lighting purposes, with Japan. The wire is shipped direct from Bristol to Yokohama. The palace of the mikado is said to be wired with the product of the National company's factory.

=New hydraulic elevators have been placed in the north and south towers of the factory of the Beacon Falls Rubber Shoe Co. (Beacon Falls, Connecticut).

PERSONAL MENTION.

THE echoes of the very successful dinner of the New England Rubber Club, reported in THE INDIA RUBBER WORLD last month, are still to be heard, and mark it as one of the most notable trade dinners ever held in Boston. Aside from the excellent work of the dinner committee, the interest shown by the president, the Hon. L. D. Apsley, who journeyed to Washington expressly to secure such distinguished speakers as Secretary Moody, is fully appreciated by all.

=Colonel Theodore Ayrault Dodge, whose connection with the India-rubber industry is yet well remembered, has devoted himself of late to his literary work. He is the author of a series of volumes entitled "Great Captains," the first of which was devoted to Julius Cæsar. His publishers, Messrs. Houghton, Mifflin & Co. (Boston), now announce a new work in this series, on "Napoleon," in four volumes, of which the first two are in press.

=Mr. Richard A. Leigh, who has patented a process for vulcanizing the product of the so called Colorado rubber plant, was formerly a well known superintendent of rubber factories in the East. He was ordered to Colorado because of a slight lung trouble, from which he has fully recovered.

=Herr Hans I. W. Clouth, of Franz Clouth, Rheinisch Gummiwaaren Fabrik m. b. H. (Cologne-Nippes, Germany), after several weeks spent in visiting rubber manufacturers in the United States, has returned home.

=Mr. Herbert Laws Webb, after a residence of some fifteen years in New York, has returned to London, where he has opened an office, at 35, Old Queen street, Westminster, S. W., for practice as consulting electrical engineer. Mr. Webb was a valued contributor to the columns of THE INDIA RUBBER WORLD, in its earlier years, and while it still bore the sub title "*and Electrical Trades Review.*"

=Mr. E. I. Aldrich, selling agent of the Hood Rubber Co. (Boston), is on his way to Europe for a brief vacation.

=Ohio newspapers of March 11 contained complimentary mention of the bravery of Captain Claude C. Hooven, of the State militia, in connection with a disturbance at Springfield which made it necessary for Governor Herrick to call out troops. Captain Hooven is one of the incorporators of the new Dayton Rubber Co.

=Mr. Charles H. Dale, president of the Rubber Goods Manufacturing Co. (New York), has just returned from a winter trip to Florida.

=Mr. Arthur F. Townsend, president of the Manhattan Rubber Manufacturing Co. (New York), has returned from a business trip to Cuba.

=Mr. George A. Lewis, president of the Beacon Falls Rubber Shoe Co. (Beacon Falls, Connecticut), has been spending the Winter in Jamaica, West Indies.

=Edward A. Murphy, of Jersey City, who is mentioned as a candidate for the New Jersey legislature, is said to intend, in the event of his election, to introduce a bill to require all railway companies operating overhead lines in cities in that state to deaden the noise of their trains to have the tracks laid on cushions of rubber.

=Mr. William J. Cable, of Boston, is rumored to have gone to Argentina for permanent residence, his family having joined him there.

ADVANCE IN RAW MATERIALS.

A CONSIDERATION of the following advances in the cost of the raw materials of the rubber manufacture has influenced the makers of mechanical rubber goods in dealing with the present and prospective prices of their products—the figures having been compiled by a member of the trade:

FINE PARA.

Average price per pound for 18 years (1885-1902 inclusive).....	.76
Average price for 18 months past.....	\$1.02 to 1.12
Present price.....	\$1.12
Increase, present price over 18 years' average.....	47%

COARSE PARA.

Average price for 7 years (1896-1902 inclusive).....	.53
Average price for 18 months past.....	.58 to .69
Present price.....	.69
Increase, present price over 7 years' average.....	30%

COTTON DUCK.

Range of prices for 9 years (1895-1903 inclusive), in cents per pound.....	12¼ to 17
Price 1903.....	15
Range of prices for the past 6 months.....	22 to 26
Present price.....	26
Increase, present price over 9 years' average.....	73%

COTTON HOSE YARNS.

Normal prices for many years past.....	16 to 18
Present prices, according to number of yarn, etc.....	28 to 32
Increase, about.....	76%

It is pointed out that owing to the short time in which crude rubber now reaches the market, it is very green. Consequently the present shrinkages are very much greater than was the case in connection with better seasoned rubber of former days. This is a fact that adds very materially to the cost of the rubber before it can be manufactured into goods.

ANOTHER ADVANCE IN RUBBER SHOE PRICES.

THE news of chief interest of the month in the rubber footwear branch was the announcement, on March 18, by the United States Rubber Co., of a revision of their discounts, with the result of advancing the net prices of boots and shoes about 7 per cent. over the rates in effect since February 1. The official announcement follows:

NEW YORK, March 18, 1904.

Because of the advance in cost of crude rubber since our February announcement, on and after this date our prices are advanced as follows:

The first discount will be 25 instead of 30 per cent. off, and on Colonials we drop one discount of 5 per cent., other discounts remaining the same, but all subject to future changes. On Tennis we change the discount from 12 1-2 to 8 per cent. If you have heretofore received from retail dealers actual regular detail orders exceeding your detail order to us, your case, upon satisfactory proof, will receive our careful consideration.

UNITED STATES RUBBER CO.

The following table will show at a glance the different schedules of discount in effect since last summer, the first line of figures after each brand giving the discounts of June 1, 1903, the second line those announced February 1, 1904, and the third line the existing rate:

First quality (except Woonsocket and Meyer).....	{	35@5@3 30@5@3 25@5@3
Woonsocket and Meyer brands.....	{	35@ 5@5@3 30@10@5@3 25@10@5@3
Second quality (except Rhode Island) ...	{	35@10@5@3 30@ 5@5@3 25@ 5@5@3
Rhode Island brand.....	{	35@10@5@5@3 30@10@5@5@3 25@10@5@5@3
Colonial brand	{	50 45@5@5 45@5

The comparative statement which follows will give an idea of the fluctuations in net prices of rubber footwear for seven years past. The prices are given of plain sandals and of short boots, both list and net, under the discounts ruling at the various dates in the table.

DATES.	PLAIN SANDALS.		SHORT BOOTS.	
	List.	Net.	List.	Net.
Apr. 1, 1897.....	\$0.70	\$0.50	\$3.00	\$2.14
Oct. 1, 1897.....	.70	.53	3.00	2.25
Apr. 1, 1898.....	.85	.61	3.50	2.49
Nov. 1, 1898.....	.85	.64	3.50	2.63
Apr. 1, 1899.....	.90	.64	3.80	2.71
Nov. 1, 1899.....	.90	.68	3.80	2.85
Apr. 1, 1900.....	.88	.63	4.20	2.99
Nov. 1, 1900.....	.88	.66	4.20	3.15
Jan. 3, 1901.....	.88	.63	4.20	2.99
Feb. 1, 1901.....	.88	.51	4.20	2.46
Apr. 1, 1901.....	.88	.49	4.20	2.33
Jan. 1, 1902.....	.95	.54	4.50	2.55
Jan. 1, 1903.....	.92	.52	4.30	2.44
Jun. 1, 1903.....	.92	.55	4.30	2.58
Feb. 1, 1904.....	.92	.59	4.30	2.77
Mar. 18, 1904.....	.92	.64	4.30	2.97

At the beginning of the season it was intimated that one 5 per cent. discount from each brand was to be dropped on June 1, as usual, and it is not stated that the increase in rates going into effect on March 18 will obviate a further advance in June.

The other rubber shoe manufacturing concerns have revised their prices practically to correspond with the action of the United States Rubber Co. Herewith is the formal notice to their customers of the Apsley Rubber Co.:

However much we regret it, we are obliged with others, on account of the still further advance in crude rubber, to advance our prices again. The conditions warrant this advance and it is absolutely necessary if we are to maintain the quality of our goods.

The discounts from this day, subject to change without notice will be:

Apsley Brand, 25, 5 and 3.

Hudson Brand, 25, 5, 3 and 10.

Middlesex, 45, 5, 8 and 8.

Terms and conditions of sale remain the same. Very respectfully,

APSLEY RUBBER CO.

The Hood Rubber Co. and the Beacon Falls Rubber Shoe Co. have issued, under date of March 19, new net price lists, to be in effect until May 31, 1904, the same involving a rate of advance corresponding to that made by the other companies.

"THE sales of the United States Rubber Co. this season have been the largest in its history," said an official of that corporation to THE INDIA RUBBER WORLD. President Colt made the statement a short time ago that the sales for 1903 amounted to \$30,000,000 which was \$3,000,000 more than for 1902 and \$5,000,000 more than for 1901. Since the first of the year the sales have continued to grow. This was especially true during January, for there was of course some falling off in February. I say of course, because the prices on all our goods were advanced about 7½ per cent. on February 1, and the trade, having every reason to know that advances would be made on that date, rushed in large orders in anticipation. Orders are now coming in at a lively rate, and most of our factories have enough business ahead to keep them going for four months, and apparently they will be busy all summer. [Another advance has since been made.]

"In regard to stocks, it is no exaggeration to state they were probably never more thoroughly depleted at this season. In the hands of the manufacturers there is practically nothing, all sold out so that not even emergency orders can be filled. Our salesmen give us to understand that the jobbers are no better supplied. They have even got rid of any old goods that in some instances were carried over. Many of them have been obliged to curtail the orders of their customers because they did not have enough goods and could not get them. It is also pretty well understood that the retailers are sold out, and this is evidently the impression of the jobbers from their inclination to purchase increased amounts for the coming season. Taken all together, the rubber shoe people can bless the winter, not only for favors past but for favors that are to come. Four months of continuous wet and snow compels people to use rubber footwear. This year the business of this company will undoubtedly show a big increase in the money value of its sales, because we shall probably sell more goods, and we shall sell at advanced prices. But this does not mean that the company will make any more profit. In fact it may not make as much, on account of the advance in the cost of crude rubber and cotton duck. The cost of all materials is higher, we think, even higher than the ratio of our advance."

* * *

MR. WILLIAM MORSE, president of the Merchants Rubber Co. (New York), was also optimistic as to the situation. "The past season," said he, "has been the greatest ever known. Everybody sold everything they could get hold of. Four months of hard winter made the people buy of the retailers, forced the retailers to reorder of the jobbers, compelled the

jobbers to take all they could get from the factories. Now, at the end of the winter, nobody, retailer, jobber, or manufacturer, has any goods on hand. It is a lovely situation for the man in the business. The past season has not only been the best we have had, but the character of the weather has been such that an enormous quantity of heavy goods was taken. The snow has been deep all over New England and the Eastern states, and light shoes did not answer. The people had to buy arctics and felt lined shoes and boots. The sale of boots was not only larger than ever before known, but the buyers were not even satisfied with the ordinary short boots but wanted the 'storm' goods—those that come up to the thigh. There are practically no boots to be had anywhere now. These goods are of course high priced and so the volume of business is largely swelled, and in addition to that the quantity of rubber used was greatly increased. The demand for rubber to replace these heavy goods will be tremendous, and I do not look for much lower prices. Right now the jobbers are busy taking orders from the retailers, and they have their hands full placing them. I have never known such a demand for goods, and I have never known the jobber to have so few goods to sell.

"There is another branch of the trade that has grown enormously, entirely apart from the question of weather. This is the tennis shoe business. In all lines of these goods, for tennis, boating, bowling, hand ball, or any other athletic sport, the development is phenomenal. The old leather shoe with a coating of rubber on its sole is no longer in vogue. People now want the regular canvas shoe with an all rubber sole, and the factories making these goods are very much rushed. Prices on all this class of goods have been advanced very considerably, but that is not in any way diminishing the orders. The 'Champion' tennis shoe, which may be regarded as a standard, has heretofore always retailed to the customer at 50 cents. He will probably have to pay 65 for it this season, and even at that there is not a great deal in it for the retail dealer. High prices of material are of course responsible for these increases, but in an article in such popular demand it will not cause any falling off in sales. If a tennis player needs a shoe he will not go without it on account of a few cents additional cost. The sale of this kind of shoe is, fully five times as great now as it was five years ago, and is increasing all the time. The increase in boating and bowling and the development of basket ball and other gymnasium games is responsible for this growth. I look for it to continue."

* * *

IN the retail trade the same report was made as to the depletion of stocks of rubber shoes on account of the strenuous winter weather. The managers of the shoe departments of several of the large New York stores reported to a representative of THE INDIA RUBBER WORLD that they had been kept more than busy keeping any goods at all on their counters. There was not a variation in the statement that the demand for rubber footwear had been unparalleled.

"What would you expect?" asked the shoe man at one of the largest department stores. "When we have had four solid months of snow and slush and ice in the city—not here on the avenue or on Broadway, where the street cleaners are frequently seen, but in the streets where most of the people live—it is not surprising that retail merchants are out of goods. My stock that I had set aside for the winter was gone by January 1, and since then I have sent in many emergency orders and have bought repeatedly, but still I have only a few odds and ends left. The demand has been continuous and it began before Thanksgiving. All kinds of rubber goods have sold unusually well, but of course footwear has been

most active. A mild winter, even when there is snow and wet, does not force the people to buy, because as long as it is mild they think the moisture will not last long and they can get along without rubbers. But when the snow falls, and then falls and falls again without melting, and the temperature remains below freezing, and the streets remain icy, no makeshifts will do, and they rush for rubber shoes. I know the jobbers are out of goods on account of the difficulty of buying, and I know the retailers are out of goods on account of my own condition, but I look for big sales to consumers next year, and I am going to order heavily. It is inevitable that with such continuous bad weather that the rubber shoes and boots in the hands of the users have been largely worn out. People who had rubber footwear at the beginning of the season, or who bought early in the season, have undoubtedly worn out what they had, and while many are stretching along in a dilapidated condition because spring is at hand, they will be compelled to buy again as soon as the first storms come in the fall. For this reason I do not feel that the retailers need believe that the public is stocked up. While the dealers have sold out, the users have worn out, so everybody will have to start fresh. I look for big sales next November and December, unless the weather is abnormally dry and pleasant."

* * *

A BOSTON report states: "The leather shoe trade has suffered and the rubber footwear trade has gained by the weather since the middle of November. Throughout the West the demand for rubbers started in early but in the Eastern section of the country there was no rush to the demand until just after Christmas, and from that time to this it has been necessary to wear rubbers almost every day. Old shoes have been good enough to wear under rubbers. This is where the shoe trade have been badly hit."

A Baltimore report says: "Since the fire there has been an unusual demand for rubber shoes, due to the inclement weather, particularly of the past few days, and also to the fact that few car lines are running, and consequently people have had to walk. Many of the retail rubber houses were burned out, and a shortage resulted, which has been very hard to fill."

* * *

UNITED STATES RUBBER CO.

THE company have retired another \$1,000,000 of the 5 per cent. funding notes issued in 1902, leaving \$10,000,000 due in March, 1905, which remainder, it is understood, have been funded into bonds running to 1908. The object of these notes was to retire the former floating debt of the company and the constituent companies, and to provide working capital, and the result has been to strengthen the financial position of the company, that it is now confidently expected that a diversion of a portion of the net earnings to the shareholders may be possible this year. The suggestion is made that the company may be able to put the preferred shares on a 4 per cent. dividend basis. One favorable situation is that the company has made a new departure, to the extent that they have reserved the right this year to advance the prices of goods or may be warranted by an advance in the cost of raw materials. Last year, while adhering throughout to prices made at the beginning of the year, although the volume of business was exceptionally large, the company was prevented from securing an adequate profit on the business.

THE Russian-American India-Rubber Co. (St. Petersburg) have been permitted to transfer from their reserve fund, of 2,030,081 rubles, to their capital stock account, 1,500,000 rubles.

THE TEXTILE GOODS MARKET.

SINCE the last issue of THE INDIA RUBBER WORLD the staple cotton market has been the center of more attention, perhaps, than at any time since the civil war, because of the collapse of the "bull" cotton firm of Daniel J. Sully & Co. (New York) on March 18. That day saw prices on spot cotton in New York and New Orleans ruling strong; the quotation here that remained unchanged was 15 cents. The futures in this market for the active months stood above 15 cents, May being 15.22 cents. Trading from the opening was steady, and it was not until the middle of the afternoon of that day that the "bulls" saw that their Black Friday had come. At 2 P. M. the superintendent of the Cotton Exchange announced the suspension of D. J. Sully & Co.

The "bears" then began their assault upon the market, but the break that followed did not drop to a lower level by what is properly termed a "decline," but dropped off precipitately from 200 to 250 points on the active futures, and on all futures the decrease in values was material. Sully & Co. at the time held 300,000 bales of cotton, the depreciation of values to the firm representing a loss of about \$3,000,000. The failure of Sully & Co., while unexpected to the public in general, was looked for by a few of those on the "inside," but it had the effect of clarifying the staple market as nothing else at that time possibly could. The suspension was not forced by the fact that cotton was worth less than 16 to 17 cents a pound. It was brought about by the refusal of the purchasing public to take the raw material and finished product fast enough to equalize the supply and demand. This deduction is clearly borne out by the fact that instead of dropping back to 12 cents, which price has been considered by many to be the true value of cotton, the actual spot market reacted about 2 cents per pound, and to-day it is quoted at about 15 cents in the local market, with offers not heavy at this price.

It can thus be stated with safety that cotton can be sold freely in large quantities at this figure, showing that the failure of Mr. Sully has clarified the atmosphere on at least one important point—i. e., the value of cotton at the moment. If it is worth in spot 14½ to 15 cents, its value will naturally increase from now until the conditions of the new crop are somewhat in evidence. The failure of this "bull" firm has not added a single bale of cotton to the visible supply, and it will be well for the consumers of manufactured stock to realize this fact.

The trend of the goods market has not changed materially since last writing, notwithstanding there has been so much interest and excitement in the staple division. Cotton duck, such as is used by the mechanical rubber manufacturers, is selling at 26 cents per pound, the same as a month ago. Rubber concerns who were fortunate enough to place their contracts last fall for their year's supply at from 17½ to 20 cents, are now making their requisitions for the goods, and the duck mills have been delivering as promptly as possible. These mills had their cotton purchased early in the season, and have not been compelled to replenish, except in special cases. It is said that the one corporation still has about 50,000 bales on hand, which is about one-third of its entire consumption. The mills are not compelled to run at full capacity, and are curtailing their consumption so as to make it carry them through until the new crop materializes. It is hardly possible that the price of duck will advance further, as it is not thought, that the mills will have to pay more for new crop cotton than they have been paying.

As they are situated to-day, it is safe to say that they will not spin "futures," and rather than allow stocks to accumulate they will stop their looms.

Not since last June have they been compelled to make up stock, until the present time, and there is not much likelihood that the market will be allowed to carry much spot duck.

There has been a steady, although comparatively light demand for sheetings from the manufacturers of boots and shoes, at ruling prices, which have not materially changed since last reports. They have bought only such quantities as they have required from time to time, making no effort to provide for the future. They believe that prices are as high as they are likely to go, and by waiting they will be in a position to avail themselves of lower rates in case the market eases off. Felts have been in slow demand, although manufacturers report having had a good year taking it as a whole. The high value of wools has been reflected in the prices asked for felts, and there is nothing at present that warrants the belief that prices are going to be any cheaper for some time to come. Raw materials of every class are higher than for many years, and manufacturers of felt and knit boots do not look for lower prices soon. The yarns used in these boots are spun from carpet wools, which have not been so scarce and high for many years, and the recent addition of an extra duty has added to the cost of importing them. The present Russo-Japanese war is having the effect to check exports of wool from the Russian empire, and other Oriental countries. These wools have advanced during the past year from 20 to 50 per cent. per pound, with few offerings now. The gradual development of sources which require these wools threaten to create a great scarcity of the material even under normal conditions.

Following are the prices of middling upland spot cotton at the leading selling ports on the different dates mentioned:

	New York.	New Orleans.	Liverpool.
March 5..	16.25 cents.	15½ cents.	8.32d.
March 12.....	16.65 cents.	16 cents.	8.70d.
March 19.....	14.50 cents.	14¾ cents.	7.74d.
March 26.....	15 30 cents.	15½ cents.	8.08d.

The range of prices on the various lines of cottons used by the rubber trade will be found below, having been quoted up to date:

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

36" Household Favorite	6¼ cents.
40" Household Favorite	7 cents.
36" Henrietta, L. L.	6 cents.
39" Henrietta, H.	(net) 5¾ cents.
38½" Henrietta, S.	(net) 5¼ cents.
40" Henrietta, P. W.	7½ cents.
36" Florence C.	4¼ cents.
40" Majestic C. C.	(net) 8½ cents.
40" Majestic B. B. B.	" 8 cents.
40" Majestic B. B.	" 7½ cents.
40" Norwood	" 6½ cents.
36" India, A. A. A.	" 7¼ cents.

Sheetings.		40" Selkirk... 8½c.	40" Shamrock... 10 c.
40" Highgate... 6¾c.	40" Sellew 8¼c.	Ducks.	
40" Hightown... 7 c.	48" Mohawk... 11 c.	40" 7 oz. Cran-	
40" Hobart... 7¼c.	40" Marcus... 6½c.	ford... 10 c.	
40" Kingstons... 8 c.	40" Mallory... 6 c.	40" 8 oz. Chart-	
39" Stonyhurst... 6 c.	36" Capstans... 4½c.	res.... 10½c.	
39" Sorosis... 5¾c.	Osnaburgs.		40" 10 oz. Carew... 13½c.
40" Seefeld... 9¼c.	40" Iroquois... 10 c.	40" 11 oz. Carita... 15 c.	

ON March 8 the program of the meeting of the Commercial Club of Kansas City, Missouri, included an address on "Rubber From a Historical, Histological, Botanical and Commercial Standpoint," by L. D. Havenhill, member of the Kansas City section of the American Chemical Society.

AT a meeting of the New England section of the American Institute of Electrical Engineers, at Boston, on March 2, an illustrated lecture was delivered by Mr. H. A. Morss, of the Simplex Electric Co., on "The Manufacture of Insulated Wires and Cables."

MR. BANIGAN AS A LABOR AGITATOR.

THE late Joseph Banigan, who started life as a mixer in a rubber mill at \$1.25 a day and no "overtime," and who became one of the wealthiest rubber manufacturers in America, once told in strict confidence the following personal experience:

"When I was a grinder man there was a man worked beside me who was a natural born organizer and politician. He had great ideas about the rights of the working man, and proved to me over and over again that no capitalist could exist if it was not for labor; that it therefore followed that the laborer should have more say about what he did, that he should work fewer hours, get better pay, and in fact, be a sort of partner of the boss. One of his particular ideas was that a mill man should work only at mixing and warming, that a man who ran a calender should not be asked to do anything else. If a man was put on the heel press, he should stay there at full pay, even if the press was idle, and not be required to sort lasts, or help in the varnish room. His ideas got a strong hold on me until I talked them over with my mother. She soon put a 'bee in my bonnet.'

"Joseph," said she, 'do any blessed thing the boss tells you. If you stay on the mixing mill, a dollar and a quarter a day is all you will earn, and all you will get, till the day of your death. Learn to do everything. Stay in the factory till morning if necessary, and you will get more money and may be boss yourself some day.'

"That was the turning point in my career," said Mr. Banigan. "I simply took hold of every job and mastered it, and

in time became, as you know, fairly successful."

"What about your friend, the man with the ideas?" he was asked.

"Poor fellow! He didn't get on very well. He was employed by various mills, but somehow he never had a good job long. At present—I don't know as I should tell it, he is—well, he is getting \$2 a day in one of my mills, and I am afraid he doesn't quite earn it. But he is an authority on the ideal relations between labor and capital," said Mr. Banigan, with a twinkle in his eye.

FOR ALL BLACK RUBBER COMPOUNDS.

THE many uses to which bituminous products have been put in compounding India-rubber have induced the largest producer of these products in the world—the Barber Asphalt Paving Co.—to establish a New York testing laboratory, and to retain for its director Mr. Clifford Richardson, who has spent several years in investigating the physical conditions of all sorts of bitumen. The result already is that this company, who have long been known to be the pioneers in the manipulation and processing in these materials, are able to-day to furnish products different from any on the market and in every way most uniform and satisfactory. In other words, this laboratory produces bitumens of almost any character that the rubber manufacturer may desire. For example, one of their products, the "Genasco M. R. Hydro-Carbon," made from the highest class of asphalt, is already getting a strong foothold in the rubber trade because of its marvelous adaptability to certain wants in the country.

REVIEW OF THE CRUDE RUBBER MARKET.

PRICES of crude rubber during March have been on a steady advance. There has been no reaction whatever in the majority of the grades. New Upriver fine began the month about \$1.06 @ \$1.07, and increased steadily until it closed about \$1.10 @ \$1.11. There was not a single setback or period of sagging. The same was true of other Pará grades, except that Islands was a trifle higher about the 18th or 19th of the month than at the close. New Islands fine opened about \$1.03 and steadily advanced until it was sold at something like \$1.09 @ \$1.10 about the date mentioned, stocks being exceptionally light at that time. Subsequently the quotations eased off about 2 cents.

In Africans prices have steadily and rapidly advanced. Prime Lopor strip, which was thought to be high at 85 @ 86 at the first of the month, was hardly obtainable at less than 93 at the close. The Antwerp auction on March 18 disclosed the fact that the offerings were comparatively poor and small, and that the bidders were eager and numerous. Only 297 tons were offered, and this was mostly in small lots, with many inferior parcels. The valuation estimated was an average of 15 centimes above the sales of February, and the prices brought at the auction were from 50 to 55 centimes above the valuation. American firms bought very little, their bids for the most part being too low. One importer, for instance, sent a bid for 75,000 pounds at 2½ cents above valuation, but the rubber he wanted sold at 4½ cents above valuation. Further details appear in another column.

There is very little crude rubber to be had on the market, in spite of the unusually large receipts during the past two months. Importers are sold out in advance of arrivals, and

none of them is able to carry any stock. The manufacturers except a few of the very large ones, are believed to be without stocks and are eagerly inquiring for rubber, in many instances for immediate necessities. The big combination companies are fairly well supplied, having received the greater part of the recent heavy importations. The Rubber Goods Manufacturing Co. not only has its factories well fitted up, but has stored a large quantity in its new warehouse at Passaic, New Jersey. The United States Rubber Co. has been a large importer of rubber, and also a large buyer in the home market, and, it is understood, is fairly well supplied. A few other large companies are also apparently easy, but most of the smaller concerns are anxious seekers for crude rubber.

The official figures from the United States customs service indicate the heavy rate of importations of rubber of late, as compared with former years. The figures show the volume of imports of rubber, of all grades, for the first eight months (July to February inclusive) of the three past fiscal years:

	Pounds,
July 1, 1901, to February 28, 1902.....	32,891,798
July 1, 1902, to February 28, 1903.....	34,579,484
July 1, 1903, to February 29, 1904.....	38,667,140

Taking into consideration the invoice values of the rubber imported, the average value of all grades, per pound, has been as follows:

July 1, 1901, to February 28, 1902.....	49.3 cents.
July 1, 1902, to February 28, 1903.....	54.3 cents.
July 1, 1903, to February 29, 1904.....	67.9 cents.

The average import price for the last eight months would appear, therefore, to have been 37¼ per cent. higher than for the corresponding eight months two years ago.

Arrivals at Pará, of all grades, including Caucho, for the past four seasons, have been as follows, in tons:

	1900-01.	1901-02.	1902-03.	1903-04.
To December 31.....	11,300	13,630	12,250	13,470
" March 31.....	21,820	24,530	23,540	24,990

[a—To March 29, 1904.]

Following is a statement of prices of Pará grades, one year ago, one month ago, and on March 31—the current date:

PARA.	Apr. 1, '03.	Mar. 1, '04.	Mar. 31.
Islands, fine, new.....	87@88	102@103	107@108
Islands, fine, old.....	@	@	@
Upriver, fine, new.....	90@91	106@107	109@110
Upriver, fine, old.....	95@96	108@109	110@111
Islands, coarse, new.....	56@57	66@67	67@68
Islands, coarse, old.....	@	None here	None here
Upriver, coarse, new.....	72@73	83@84	86@87
Upriver, coarse, old.....	@	85@86	None here
Caucho (Peruvian) sheet.....	54@55	66@67	69@70
Caucho (Peruvian) ball.....	67@68	76@77	77@78

The market for other sorts in New York on which the advance has also been very material, is as follows:

AFRICAN.	CENTRALS.
Sierra Leone, 1st quality 95 @96	Esmeralda, sausage... 76 @77
Massai, red..... 95 @96	Guayaquil, strip..... 67 @68
Benguella..... 75 @76	Nicaragua, scrap..... 76 @77
Cameroon ball..... 65 @66	Panama, slab..... 57 @58
Accra flake..... 36 @37	Mexican, scrap..... 73 @74
Accra buttons..... 54 @55	Mexican, siab..... 54 @55
Lopori ball, prime..... 96 @97	Mangabeira, sheet..... 57 @58
Lopori strip, prime..... 91 @92	
Ikelemba..... 96 @97	EAST INDIAN.
Madagascar, pinky... 84 @85	Assam..... 81 @82
	Borneo..... @

Late Pará cables quote:

Per Kilo.	Per Kilo.
Islands, fine. 6\$700	Upriver, fine... 7\$900
Islands, coarse..... 3\$700	Upriver, coarse..... 6\$000

Exchange, 12 $\frac{1}{2}$ d.

Last Manáos advices:

Upriver, fine..... 7\$800	Upriver, coarse..... 5\$700
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Exchange, 12 $\frac{3}{8}$ d.

NEW YORK RUBBER PRICES FOR FEBRUARY (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine.....	1.01@1.07	84@90	72@79
Upriver, coarse.....	82@86	70@73	60@63
Islands, fine.....	99@1.04	82@87	69@76
Islands, coarse.....	64@67	50@54	45@48
Cametá, coarse.....	64@67	52@57	45@50

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.		ENGLAND.	
	Fine and Medium.	Coarse.	Total 1904.	Total 1903.
Stocks, January 31..... tons	63	1 =	64	253
Arrivals, February.....	1830	697 =	2527	1609
Aggregating.....	1893	698 =	2591	1862
Deliveries, February.....	1791	685 =	2476	1563
Stocks, February 29... ..	102	13 =	115	299

	PARÁ.		ENGLAND.	
	1904.	1903.	1904.	1903.
Stocks, Jan. 31..... tons	565	510	590	1050
Arrivals, February....	3680	4740	765	1110
Aggregating.....	4245	4895	1355	2160
Deliveries, February..	3810	4865	975	1025
Stocks, Feb. 29..	435	30	380	1135

	1904.	1903.	1902.
World's visible supply, February 29..... tons	2867	3945	5327
Pará receipts, July 1 to February 29.....	19,200	17,801	18,839
Pará receipts of Caucho, same dates.....	2304	1709	1696
Afloat from Pará to United States, Feb. 29..	903	1188	1073
Afloat from Pará to Europe, February 29....	1024	1283	910

In regard to the financial situation, Albert B. Beers, (broker in India-rubber, No. 58 William street, New York) advises us:

"There has been a fair demand for paper through March, mostly from out-of-town banks, rates being 5½ @ 6½ per cent. during the early part of the month, and dropping to 5 @ 6 per cent. later, these rates being for the best rubber names, and those not so well known going rather higher in some instances."

Liverpool.

WILLIAM WRIGHT & CO. report [March 1]:

Fine Pará.—The market has been active and advancing, and prices are again 2d. per pound dearer. This advance has been largely due to the very heavy buying in Manáos and Pará for American account. According to our advices the shoe trade is now pretty well supplied with stock, and the mechanical trade is dull, which may have some effect later on. We still repeat there is nothing in the statistical position of this article to justify an advance, at this stage of the crop, of 6d. per pound in two months. Market closes barely steady, with sellers hard fine spot at 4s. 6d., Islands 4s. 5d. Forward: A good business done at full rates, closing with sellers at 4s. 5¼d.

London.

MARCH 18.—Market for Pará continues strong; fair business done at firm to dearer rates, including fine hard on spot and forward delivery at 4s. 7½d. @ 4s. 8d. and sellers, and hard entre fine up to 4s. 6d. Fine soft cure sold at 4s. 6½d. @ 4s. 7d. for spot and near delivery and buyers. Negroheads in small supply; Scrappy sold at 3s. 7¼d. @ 3s. 8d. for near delivery; Islands 2s. 10½d. Peruvian ball on spot at 3s. 4½d.; slab score, with buyers at 2s. 10d. Mollendo fine quoted at 4s. 6½d.

At to-day's auctions Mattogrosso virgin sheet sold at 4s.; mixed virgin and negroheads part dirty 3s. 8½d.; fair negroheads 3s. 4½d. Colombian good to fine brown scrap, 3s. 4d. @ 3s. 5d. Madagascar fair to good pinky 2s. 7d. @ 3s. 2¼d. Majunga part dark coated 2s. 6d. @ 2s. 8½d. Mozambique 3s. 9¼d.; unripe ball 1s. 11½d. @ 2s. 2¼d. Lamu ball, good, 3s. 7½d.; fair, little sandy, 3s. 5¼d.

Ceylon.—Forty packages offered and sold, good to fine biscuits from Pará seed at 5s. @ 5s. 3¼d, small mixed rough, 4s. 6d., fine pale scrap 3s. 11¼d. @ 4s. ¼d., fair ditto 3s. 9d. @ 3s. 9¾d., inferior sandy mixed ditto 2s. 2d. @ 2s. 4½d. [The highest price named above is equivalent to \$1.29¼ per pound.]

Balata.—Thirteen bags Sheet offered and sold, mixed thin and thick at 2s. 2½d. 50 bales Block were bought in.

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The sale which took place on February 24 and for which 370 tons were catalogued, passed off with a firm tone. The prices averaged about 3 per cent. higher than the prices paid at the January sale. A good deal of the buying was again attributed to the United States. The principal lots realized prices as follows:

	Valuation.	Sold at.
70 tons Upper Congo balls firsts.....	francs 10.05	10.47½
21 " Lopori firsts ..	10.	10.47½
11 " Lopori seconds.....	8 75	8.90

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound—show a slight decline from the last published prices, as follows:

Old Rubber Boots and Shoes—Domestic.....	6½ @
Do —Foreign.....	6 @ 6½
Pneumatic Bicycle Tires.....	4 @ 4½
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	8½ @ 8¾
Heavy Black Rubber.....	4
Air Brake Hose.....	2¼ @ 2½
Fire and Large Hose	1¾ @ 1¾
Garden Hose.....	1¾ @ 1½
Matting.....	¾ @ 1

50	"	Uelé Stripes	9.	9.12½
35	"	Aruwimi	9.50	9.85
14	"	Equateur firsts	9.90	10.37½

The sale of March 18 was very firm. A rise of 5 per cent. on valuations was paid in the average. Nearly the whole quantity found buyers—namely 338 tons out of 348 tons—at prices as follows:

	Estimation.	Sold at.
Lopori firsts	francs 10.30	11.02½
Lopori seconds	8.50	8.87½
Lake Leopold firsts	10.	10.57½
Lake Leopold seconds	9.85	9.
Upper Congo balls	10.47½	10.87½
Mongalla strips	9.75	10.35
Aruwimi	9.60	10.30

C. SCHMID & CO., SUCCESSEURS.

Antwerp, March 19, 1904.

ANTWERP RUBBER STATISTICS FOR FEBRUARY.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, Jan. 1...kilos	426,165	134,135	643,699	648,631	542,098
Arrivals in February	364,466	545,813	607,115	459,632	884,156
Congo sorts	200,691	473,713	587,293	431,125	712,413
Other sorts	73,505	72,100	19,822	28,507	171,743
Aggregating...	790,631	679,948	1,250,814	1,108,263	1,426,254
Sales in February...	455,541	204,410	265,994	327,103	807,454
Stocks, Feb. 29 ..	335,090	475,535	984,820	781,100	618,800
Arrivals since Jan. 1	886,725	717,673	1,243,358	1,003,258	1,360,036
Congo sorts	676,682	610,254	1,201,169	874,408	1,143,409
Other sorts	210,043	107,419	42,189	128,760	216,627
Sales since Jan. 1...	1,162,535	900,240	673,247	836,197	1,033,227

RUBBER ARRIVALS AT ANTWERP.

MARCH 17.—By the *Albertville*, from the Congo:

Bunge & Co	(Société Générale Africaine)	kilos	275,000
Do	(Chemins de fer des Grand Lacs)		15,000
Do	(Société Anversoise)		28,000
Do	(Comite Spécial Katanga)		40,000
Do	(Société Isangi)		6,000
Do	(Cie. du Kasai)		36,000
G. & C. Kreglinger	(La Lobay)		11,000
Société Coloniale Anversoise (Belge du Haut Congo)			3,000
Do	(Cie. de Lomami)		21,000
Cie. Commerciale des Colonies			1,500
M. S. Cols			2,500
Do			2,000
Charles Dethier	(Société Belgika)		1,000
			442,000

Balata from Venezuela.

THE INDIA RUBBER WORLD'S correspondent at Ciudad Bolívar furnishes the following details of the shipments of Balata from that port—covering the output from Venezuela—during 1903 by months, and for the preceding years since 1896, the date of the first statistics relating to this trade. The figures indicate weights in kilograms:

January	185,168	August	nil	Total, 1902	816,752
February	275,815	September	149,830	Total, 1901	1,196,414
March	102,567	October	133,784	Total, 1900	1,216,268
April	10,318	November	72,575	Total, 1899	749,872
May	10,173	December	151,676	Total, 1898	494,168
June	2,672			Total, 1897	295,733
July	nil			Total, 1896	75,000
				Total, 1903	1,094,578

[Total, 1903, in Pounds: 2,408,072.]

PARA RUBBER VIA EUROPE.

FEB. 16.—By the <i>Ivernina</i> =Liverpool:	
Poel & Arnold (Caucho)	103,000
FEB. 13.—By the <i>Manitou</i> =London:	
United States Rubber Co. (Coarse)	15,000
FEB. 28.—By the <i>La Touraine</i> =Havre:	
Poel & Arnold (Coarse)	20,000
FEB. 23.—By the <i>Campania</i> =Liverpool:	
Poel & Arnold (Fine)	17,000
Poel & Arnold (Coarse)	34,000

POUNDS.

FEB. 24.—By the <i>Mothke</i> =Hamburg:	
Poel & Arnold (Medium)	11,000
FEB. 26.—By the <i>Majestic</i> =Liverpool:	
Poel & Arnold (Coarse)	19,000
George A. Alden & Co. (Fine)	8,000
FEB. 29.—By the <i>Etruria</i> =Liverpool:	
George A. Alden & Co.	13,500
A. T. Morse & Co. (Fine)	10,000
Poel & Arnold (Cauchy)	25,000
MAR. 1.—By the <i>La Champagne</i> =Havre:	
Poel & Arnold (Fine)	11,000
MAR. 3.—By the <i>Oceanic</i> =Liverpool:	

Poel & Arnold (Cauchy)	50,000
MAR. 7.—By the <i>Pretoria</i> =Hamburg:	
Poel & Arnold (Fine)	29,000
MAR. 9.—By the <i>Bovic</i> =Liverpool:	
Poel & Arnold (Coarse)	22,500
MAR. 11.—By the <i>Celtic</i> =Liverpool:	
Poel & Arnold (Cauchy)	18,000
William Wright & Co. (Fine)	7,000
United States Rubber Co. (Coarse)	8,000
MAR. 14.—By the <i>La Bretagne</i> =Havre:	
Poel & Arnold (Fine)	22,000
Poel & Arnold (Coarse)	4,500

During the first two months of the present year the shipments have been light. On account of the weather in November and December being very dry, the Balata gatherers did not get to work until about the end of January. The Ciudad Bolívar custom house still being closed, exports are made by the way of Laguaira and Carúpana, though it is hoped that direct shipments may be possible before long.

Exports of fine Rubber during 1903 amounted to about 60,000 pounds, and of coarse, about 33,000 pounds.

Rubber Receipts at Manaos.

DURING February and the first eight months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	FEBRUARY.			JULY-FEBRUARY.		
	1904.	1903.	1902.	1904.	1903.	1902.
Rio Purús—Acre.....tons	1080	1838	1224	4931	4473	5119
Rio Madeira.....	297	360	421	2088	1838	2281
Rio Jurua.....	672	786	349	2782	2801	2689
Rio Javary—Iquitos....	273	78	40	2068	1330	1012
Rio Solimões.....	119	89	118	689	1165	1392
Rio Negro.....	91	124	72	358	449	259
Total.....	2532	3275	2224	12,916	12,056	12,752
Caucho.....	517	571	213	2130	1767	1826
Total.....	3049	3846	2437	15,046	13,823	14,578

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

March 7.—By the steamer *Bernard*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
Poel & Arnold.....	385,800	69,000	136,600	15,700=	607,100
New York Commercial Co.	211,000	58,500	248,000	9,800=	527,300
A. T. Morse & Co.....	241,100	50,000	122,800	10,500=	424,400
United States Rubber Co.	124,800	32,900	135,700	5,400=	298,800
William Wright & Co....	4,200	23,300			27,500
Lionel Hageners & Co..	10,900	10,000			20,900
Hagemeyer & Brunn....	11,600	2,300	3,400		17,300
Total.....	989,400	212,700	679,800	41,400=	1,923,300

March 15.—By the steamer *Dunstan*, from Manáos and Pará:

United States Rubber Co.	540,000	81,000	169,000	73,300=	863,300
Poel & Arnold.....	469,800	61,700	117,800	42,300=	691,600
New York Commercial Co.	322,900	76,100	190,200	7,700=	596,900
A. T. Morse & Co.....	85,300	23,400	68,300	29,700=	206,700
G. Amsinck & Co....	61,200	9,700	16,200	20,100=	107,200
William Wright & Co....	40,200	4,000	38,800		83,000
Lionel Hageners & Co..	8,000	6,400			14,400
Hagemeyer & Brunn....	5,700	2,400	900		9,000
Thomsen & Co.....	2,900	5,800			8,700
Total.....	1,536,000	258,300	613,400	173,100=	2,580,800

March 28.—By the steamer *Hildebrand*, from Manáos and Pará:

Poel & Arnold.....	227,400	59,300	107,600	132,400=	526,700
A. T. Morse & Co.....	105,300	27,600	49,900	1,100=	183,900
United States Rubber Co.	58,300	12,500	63,600	89,500=	223,900
New York Commercial Co.	60,500	25,100	88,800	700=	175,100
G. Amsinck & Co....	30,900	8,400	4,400	6,300=	50,000
William Wright & Co....	4,300	49,000			53,300
Hagemeyer & Brunn....	8,400	2,400	6,800		17,600
Thomsen & Co.....	5,300	7,100			12,400
L. Hageners & Co.....	4,000	2,600			6,600
Total	504,400	135,300	379,800	230,000=	1,249,500

[NOTE.—The steamer *Horatio* from Pará, due at New York on April 4, has on board 400 tons of Rubber and 70 tons of Cauchy.]

OTHER ARRIVALS AT NEW YORK

CENTRALS.

POUNDS.

FEB. 20.—By the *Byron*=Bahia:

Hirsch & Kaiser	24,000
J. H. Rossbach & Bros.	17,500
Eggers & Heinlein	8,000

FEB. 23.—By the *Pallanza*=Hamburg:

Hirsch & Kaiser	14,000
A. T. Morse & Co.	2,300

FEB. 20.—By the *Vigilant*=Mexico:

H. Marquardt & Co.	5,500
Fred Probst & Co.	3,000
L. N. Chemedlin & Co.	1,500
E. Steiger & Co.	1,000
Samuels & Cummings	500

FEB. 23.—By the *Bolivia*=Cartagena, etc.:

Isaac Brandon & Bros.	13,500
D. A. De Lima & Co.	2,000
Isaac Kubic & Co.	2,000
American Trading Co.	1,200
Joaquin Ferro	1,200
G. Amsinck & Co.	1,500
Graham, Hinkley & Co.	700
Suzarte & Whitney	500
Guterman, Rosenfeld & Co.	200
Kunhardt & Co.	200
For London	1,500

FEB. 23.—By the *Strabo*=Bahia, etc.:

J. H. Rossbach & Bros.	28,000
Hirsch & Kaiser	23,000
G. Amsinck & Co.	2,200

FEB. 23.—By the *Comus*=New Orleans:

A. T. Morse & Co.	5,500
G. Amsinck & Co.	3,300
Eggers & Heinlein	3,500

FEB. 24.—By the *Moltke*=Hamburg:

Poel & Arnold	9,800
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FEB. 25.—By the *El Siglo*=New Orleans:

Manhattan Rubber Mfg. Co.	9,000
A. T. Morse & Co.	5,500
Eggers & Heinlein	2,500

FEB. 25.—By the *Alliance*=Colon:

Hirzel, Feltman & Co.	10,500
Roldan & Van Sickle	6,500
Meyer Hecht	6,000
G. Amsinck & Co.	4,900
W. Loalza & Co.	4,200
American Trading Co.	3,300
Livingstone & Co.	2,800
W. R. Grace & Co.	2,100
A. M. Capens Sons	2,200
A. Santos & Co.	1,900
D. A. De Lima & Co.	1,900
Dumarest & Co.	1,700
Isaac Brandon & Bros.	1,700
Eggers & Heinlein	1,300
E. B. Strout	1,400
Smithers, Nordenholt & Co.	900
Mecke & Co.	800
Maldonado & Co.	400
Fred. Probst & Co.	200

MAR. 1.—By the *Caracas*=Maracaibo:

Kunhardt & Co.	4,500
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MAR. 1.—By the *Yucatan*=Colon:

Hirzel, Feltman & Co.	13,000
Lawrence Johnson & Co.	5,500
Meyer Hecht	4,900
G. Amsinck & Co.	4,800
American Trading Co.	2,000
Livingstone & Co.	1,800
Piza Nephews & Co.	1,700
Isaac Brandon & Bros.	1,000
Silva Bussenius & Co.	1,300
Roldan & Van Sickle	1,300
Rosenthal Sons & Co.	1,200
Andreas & Co.	1,000
Kunhardt & Co.	900

MAR. 1.—By the *Altai*=Cartagena, etc.:

G. Amsinck & Co.	2,500
E. B. Strout	1,500
A. D. Straus & Co.	500
Isaac Brandon & Bros.	800
A. Held	1,500
Kunhardt & Co.	800
Guterman, Rosenfeld & Co.	600
Suzarte & Whitney	300
Pedro A. Lopez	200

MAR. 5.—By the *Esperanza*=Mexico:

E. Steiger & Co.	1,200
Harburger & Stack	700
Graham Hinkley & Co.	600
H. Marquardt & Co.	1,000

CENTRALS—Continued.

MAR. 5.—By the *Carib II*=Truxillo:

Eggers & Heinlein	5,800
H. W. Peabody & Co.	1,000
A. S. Lascelles & Co.	400
For London	600

MAR. 7.—By the *El Dorado*=New Orleans:

Manhattan Rubber Mfg. Co.	13,500
Eggers & Heinlein	1,500
A. N. Rotholz	2,000
G. Amsinck & Co.	1,000

MAR. 7.—By the *Tintoretto*=Bahia:

J. H. Rossbach & Bros.	27,000
Hirsch & Kaiser	23,000
A. D. Hitch & Co.	11,000

MAR. 9.—By the *City of Washington*=Colon:

Meyer Hecht	5,800
Hirzel, Feltman & Co.	5,600
E. B. Strout	5,000
G. Amsinck & Co.	700
Silva, Bussenius & Co.	600

MAR. 9.—By the *Sarnia*=Savanilla, etc.:

Czarnikow, McDougal & Co.	1,500
Mecke & Co.	1,500
G. Amsinck & Co.	400
Hierapolis & Co.	100
Isaac Brandon & Bros.	800

MAR. 11.—By the *El Vento*=New Orleans:

A. T. Morse & Co.	8,000
Manhattan Rubber Mfg. Co.	2,200
For Europe	1,500

MAR. 12.—By the *Havana*=Mexico:

Harburger & Stack	3,500
H. Marquardt & Co.	700
Samuels & Cummings	700
L. N. Chemedlin & Co.	600
E. Steiger & Co.	500
American Trading Co.	300
Graham, Hinkley & Co.	200

MAR. 15.—By the *Seguranca*=Colon:

G. Amsinck & Co.	11,200
Hirzel, Feltman & Co.	6,100
Isaac Brandon & Bros.	6,000
Dumarest & Co.	4,600
Meyer Hecht	4,500
A. M. Capens Sons	2,700
Lawrence Johnson & Co.	2,500
Livingstone & Co.	1,800
Piza Nephews & Co.	1,600
R. G. Barthold	1,100
D. A. De Lima & Co.	1,000
Graham Hinkley & Co.	1,000
George A. Alden & Co.	1,000
Charles E. Griffin	600
Silva, Bussenius & Co.	700
Roldan & Van Sickle	600
W. Loalza & Co.	600
Mecke & Co.	500
Guterman, Rosenfeld & Co.	600
A. D. Straus & Co.	400

MAR. 15.—By the *Bleucher*=Hamburg:

Poel & Arnold	6,700
A. T. Morse & Co.	3,600

MAR. 15.—By the *Covantes*=Bahia:

J. H. Rossbach & Bros.	22,000
Hirsch & Kaiser	12,000

MAR. 17.—By the *Flandric*=Savanilla:

J. H. Recknagel & Co.	4,000
Harburger & Stack	500
G. Amsinck & Co.	500
D. A. De Lima & Co.	200

MAR. 21.—By the *Vigilancia*=Mexico:

H. Marquardt & Co.	2,500
Harburger & Stack	2,200
E. Steiger & Co.	1,000
Samuels & Cummings	1,000
For Hamburg	5,000

MAR. 21.—By the *Tennyson*=Bahia:

J. H. Rossbach & Bros.	7,800
Eggers & Heinlein	5,400
Hirsch & Kaiser	4,500
A. D. Hitch & Co.	4,500

MAR. 23.—By the *Mesaba*=London:

Eggers & Heinlein	11,000
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MAR. 23.—By the *Siberia*=Cartagena:

Kunhardt & Co.	3,200
American Trading Co.	1,300
Guterman, Rosenfeld & Co.	1,100
Isaac Brandon & Bros.	1,300

MAR. 23.—By the *Alliance*=Colon:

Hirzel, Feltman & Co.	6,500
Meyer Hecht	2,900
D. A. De Lima & Co.	2,000
Eggers & Heinlein	2,000
American Trading Co.	1,500
G. Amsinck & Co.	1,000
Isaac Brandon & Bros.	800

CENTRALS—Continued.

W. Loalza & Co.	800
F. Schettlin & Co.	600
Fred. Probst & Co.	700
Jimenez & Escobar	300

AFRICANS.

POUNDS.

FEB. 23.—By the *Campanta*=Liverpool:

A. T. Morse & Co.	36,000
George A. Alden & Co.	13,000

FEB. 23.—By the *Patricia*=Hamburg:

A. T. Morse & Co.	12,500
Poel & Arnold	13,500
George A. Alden & Co.	9,000

FEB. 24.—By the *Zeeland*=Antwerp:

George A. Alden & Co.	165,000
A. T. Morse & Co.	15,000
Poel & Arnold	8,000

FEB. 24.—By the *Moltke*=Hamburg:

A. T. Morse & Co.	29,000
Poel & Arnold	17,000
George A. Alden & Co.	9,500

FEB. 26.—By the *Majestic*=Liverpool:

A. T. Morse & Co.	15,000
George A. Alden & Co.	2,000
United States Rubber Co.	6,500

FEB. 26.—By the *Armenian*=Liverpool:

George A. Alden & Co.	66,000
Poel & Arnold	44,000

FEB. 29.—By the *St. Louis*=London:

Poel & Arnold	8,000
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FEB. 29.—By the *Etruria*=Liverpool:

George A. Alden & Co.	27,000
A. T. Morse & Co.	23,000
United States Rubber Co.	37,000

MAR. 1.—By the *La Champagne*=Havre:

A. T. Morse & Co.	30,000
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MAR. 1.—By the *Peninsular*=Lisbon:

United States Rubber Co.	179,000
George A. Alden & Co.	45,000
Rubber Trading Co.	6,500

MAR. 3.—By the *Oceanic*=Liverpool:

Poel & Arnold	17,000
Rubber Trading Co.	10,000

MAR. 7.—By the *Pretoria*=Hamburg:

A. T. Morse & Co.	33,000
George A. Alden & Co.	10,000
Poel & Arnold	3,000

MAR. 8.—By the *Vaderland*=Antwerp:

A. T. Morse & Co.	173,000
Poel & Arnold	70,000
William Wright & Co.	23,000
Robinson & Tallman	2,000

MAR. 8.—By the *Patria*=Lisbon:

George A. Alden & Co.	90,000
Poel & Arnold	22,000
A. T. Morse & Co.	11,000

MAR. 9.—By the *Bowie*=Liverpool:

George A. Alden & Co.	133,000
Poel & Arnold	67,000
United States Rubber Co.	10,000
A. T. Morse & Co.	15,000

MAR. 10.—By the *Graf Waldersee*=Hamburg:

A. T. Morse & Co.	67,000
George A. Alden & Co.	12,000

MAR. 11.—By the *Celtic*=Liverpool:

Poel & Arnold	43,000
A. T. Morse & Co.	18,000
George A. Alden & Co.	13,000
H. A. Gould Co.	3,000
Earle Brothers	1,500

MAR. 14.—By the *St. Paul*=London:

Poel & Arnold	18,000
H. A. Gould Co.	4,000

MAR. 15.—By the *Noordam*=Rotterdam:

Poel & Arnold	28,000
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MAR. 14.—By the *Umbria*=Liverpool:

United States Rubber Co.	35,000
A. T. Morse & Co.	36,000
Poel & Arnold	15,000
Rubber Trading Co.	3,500

MAR. 15.—By the *Kroonland*=Antwerp:

George A. Alden & Co.	182,000
A. T. Morse & Co.	135,000
Poel & Arnold	35,000
Joseph Cantor	9,000

MAR. 15.—By the *Bleucher*=Hamburg:

A. T. Morse & Co.	36,000
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AFRICANS—Continued.

MAR. 18.—By the <i>Cedric</i> =Liverpool:			
United States Rubber Co.	72,000		
George A. Alden & Co.	34,000		
Poel & Arnold.	9,000		
Joseph Cantor.	3,500	118,500	

MAR. 19.—By the <i>Campania</i> =Liverpool:			
A. T. Morse & Co.	11,000		
William Wright & Co.	3,500	14,500	

MAR. 21.—By the <i>Fricka</i> =Bordeaux:			
A. T. Morse & Co.	11,000		

MAR. 22.—By the <i>Zeeland</i> =Antwerp:			
A. T. Morse & Co.	40,000		
Joseph Cantor.	5,500		
William Wright & Co.	4,500	50,000	

MAR. 23.—By the <i>Cevic</i> =Liverpool:			
United States Rubber Co.	225,000		
A. T. Morse & Co.	25,000		
Rubber Trading Co.	9,000	259,000	

MAR. 23.—By the <i>Mesaba</i> =London:			
Poel & Arnold.	11,000		

MAR. 24.—By the <i>Majestic</i> =Liverpool:			
Poel & Arnold.	25,000		
George A. Alden & Co.	10,000		
A. T. Morse & Co.	2,500	37,500	

EAST INDIAN.

FEB. 23.—By the <i>Philadelphia</i> =London:			
Poel & Arnold	33,000		

MAR. 4.—By the <i>Glenroy</i> =Singapore:			
William Wright & Co.	4,500		
Poel & Arnold	13,500		
Robert Branss & Co.	11,000	29,000	

MAR. 7.—By the <i>New York</i> =London:			
Poel & Arnold.	9,000		

MAR. 14.—By the <i>Himeria</i> =Singapore:			
Poel & Arnold.	33,000		
A. T. Morse & Co.	13,500		
William Wright & Co.	13,000	59,500	

EAST INDIANS—Continued

MAR. 23.—By the <i>Mesaba</i> =London:			
Poel & Arnold.	11,000		

MAR. 24.—By the <i>Nubia</i> =Singapore:			
To order.	10,000		

PONTIANAK.

MAR. 4.—By the <i>Glenroy</i> =Singapore:			
William Wright & Co.	500,000		
Poel & Arnold.	100,000		
Heablerd Co.	90,000		
Robert Branss & Co.	45,000		
Rubber Trading Co.	25,000	760,000	

MAR. 14.—By the <i>Himeria</i> =Singapore:			
William Wright & Co.	540,000		
Poel & Arnold.	120,000		
Rubber Trading Co.	20,000		
Robert Branss & Co.	17,000	687,000	

MAR. 24.—By the <i>Nubia</i> =Singapore:			
W. R. Russell & Co.	65,000		

GUTTA-PERCHA AND BALATA.

FEB. 24.—By the <i>Moltke</i> =Hamburg:			
To order.	10,000		

MAR. 10.—By the <i>Graf Waldersee</i> =Hamburg:			
To order.	12,500		

MAR. 15.—By the <i>Blucher</i> =Hamburg:			
To order.	7,000		

FEB. 23.—By the <i>Philadelphia</i> =London:			
H. A. Gould Co.	6,000		

MAR. 7.—By the <i>Fontabelle</i> =Demerara:			
Thomas Cameron.	35,000		

MAR. 14.—By the <i>St. Paul</i> =London:			
H. A. Gould.	11,800		

MAR. 16.—By the <i>Prins Willem IV.</i> =Trinidad:			
George A. Alden & Co.	2,500		
Middleton & Co.	1,000	3,500	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—FEBRUARY.

Imports:	POUNDS.	VALUE.
India-rubber	8,922,414	\$6,210,277
Gutta-percha.	18,119	9,351
Gutta-jelutong (Pontianak)	491,371	14,902
Total	9,431,904	\$6,234,530

Exports:	POUNDS.	VALUE.
India-rubber	22,971	\$ 16,426
Reclaimed rubber	73,845	7,683
Rubber Scrap Imported	555,385	\$ 34,186

BOSTON ARRIVALS.

FEB. 6.—By the <i>Cestrian</i> =Liverpool:	POUNDS
Poel & Arnold—Caucho.	11,436

FEB. 8.—By the <i>Sylvania</i> =Liverpool:	POUNDS
Poel & Arnold—African.	14,045
Poel & Arnold—Medium Para.	16,000
Poel & Arnold—Caucho.	15,000
Total	45,045

FEB. 12.—By the <i>Devonian</i> =Liverpool:	POUNDS
Poel & Arnold—African.	11,814

FEB. 17.—By the <i>Cymric</i> =Liverpool:	POUNDS
Poel & Arnold—Fine.	22,451

FEB. 17.—By the <i>Michigan</i> =Liverpool:	POUNDS
George A. Alden & Co.—African.	18,226

FEB. 19.—By the <i>Bethania</i> =Hamburg:	POUNDS
George A. Alden & Co.—African.	22,000

FEB. 24.—By the <i>Lancastrian</i> =London:	POUNDS
George A. Alden & Co.—African.	21,896

FEB. 29.—By the <i>Kansas</i> =Liverpool:	POUNDS
Poel & Arnold—Caucho.	22,687

FEB. 29.—By the <i>Saxonia</i> =Liverpool:	POUNDS
Poel & Arnold—African.	4,288
Total	179,788

[Value, \$132,611.]

FEBRUARY EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Adelbert H. Alden.	98,570	22,061	148,593	2,831	272,055	150,389	29,085	32,780	51,756	264,010	536,065
Cmok, Schrader & Co.	73,832	15,533	78,616	—	172,981	92,650	7,140	49,640	114,960	264,390	437,371
Frank da Costa & Co.	27,421	5,666	164,725	—	197,812	61,944	5,874	69,836	1,540	139,194	337,006
J. Marques & Co.	4,791	—	6,283	—	11,074	15,727	—	5,505	7,605	28,837	39,911
Neale & Staats.	—	—	16,748	—	16,748	1,008	168	948	37	2,161	18,909
Pires, Teixeira & Co.	9,590	—	8,505	—	18,095	—	—	—	—	—	18,095
Kanthack & Co.	—	—	—	—	—	7,580	3,380	1,790	—	12,750	12,750
Singlehurst Brocklehurst & Co.	—	—	—	—	—	4,640	639	152	—	5,431	5,431
Direct from Manãos.	802,514	181,724	211,294	123,005	1,318,537	402,766	50,728	64,008	325,756	843,258	2,161,795
Direct from Iquitos.	—	—	—	—	—	82,219	8,759	47,353	93,563	231,894	231,894
Total for February	1,021,718	224,084	634,764	125,836	2,007,302	818,923	105,773	272,012	595,217	1,791,925	3,799,227
Total for January-Nov.	8,088,442	1,035,588	2,321,413	2,819,897	14,265,340	6,378,270	1,466,099	4,538,916	1,101,475	13,484,760	27,750,100
TOTAL SINCE JANUARY 1.	9,146,292	1,166,356	2,647,431	3,067,361	16,027,440	7,248,063	1,648,845	4,994,076	1,160,369	15,051,353	31,078,793

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
January, 1904.	4,982,409	235,498	4,746,911	January, 1904.	4,628,064	3,225,046	1,403,024
January, 1903.	5,881,341	191,006	5,690,335	January, 1903.	5,273,784	4,229,344	1,049,440
January, 1902.	6,273,939	172,106	6,101,833	January, 1902.	4,702,208	2,965,200	1,737,008
January, 1901.	4,448,785	364,742	4,084,043	January, 1901.	5,819,859	2,674,672	3,145,184
January, 1900.	5,528,830	268,225	5,260,605	January, 1900.	4,552,976	2,965,616	1,627,360

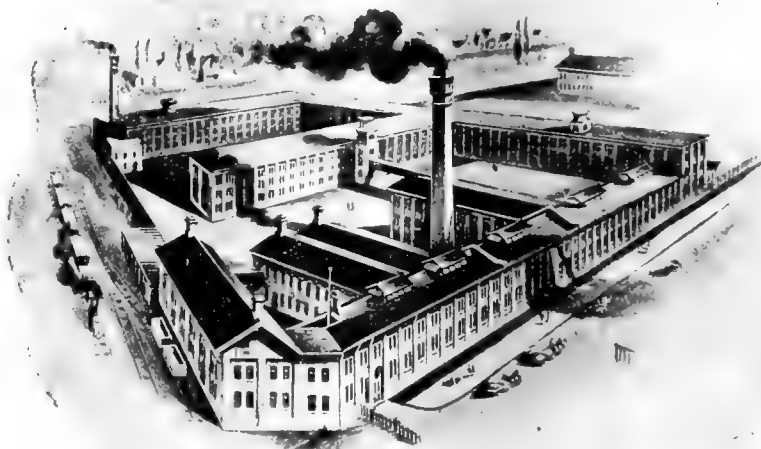
GERMANY.				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
January, 1904.	2,832,500	696,300	2,136,200	January, 1904.	243,100	2,640	240,460
January, 1903.	3,012,020	1,161,360	1,850,660	January, 1903.	260,920	220	260,700
January, 1902.	2,581,920	1,056,000	1,525,920	January, 1902.	223,960	220	223,740
January, 1901.	2,256,760	400,180	1,856,580	January, 1901.	140,800	440	140,360
January, 1900.	2,885,080	1,410,860	1,474,220	January, 1900.	—	—	—

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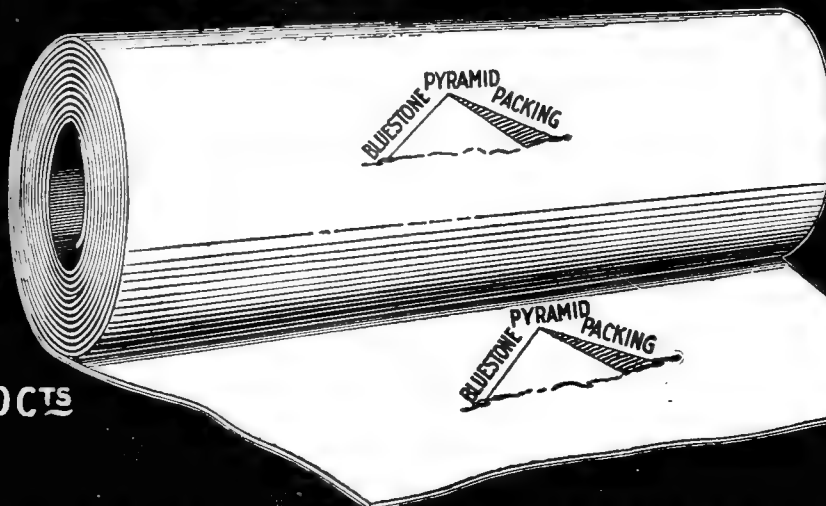
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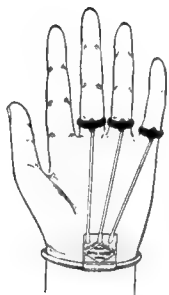
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THE BASIS OF HOPE IN RUBBER PLANTING.

A QUESTION asked by many persons, when the subject of rubber planting is first brought to their attention, is whether any rubber plantations have yet been developed profitably. If told that no large rubber plantations on a commercial basis have yet been in existence long enough for the trees to have become mature, this statement seems to afford to some minds an ample excuse for distrust of the whole business. If no large plantation of rubber is yet old enough to yield liberally, how does anyone know that rubber can be produced under cultivation? The question deserves consideration, and it may be worth while to point out some of the reasons which have encouraged the investment of a large amount of capital in rubber planting.

If an illustration from an outside field may be permitted, we may mention that the offices of this Journal overlook the first of the great suspension bridges erected over the East river, in New York city, long known as the "Brooklyn bridge." When this structure was first planned, back in 1867, no suspension bridge on such a stupendous scale had ever been built. None had even been planned. It was a great risk to put up in the air a span a third of a mile in length, weighing of itself thousands of tons, and intended to support a vast and incessant traffic. Many people said it couldn't be done; they kept on saying it for sixteen years. So long as the bridge was building people were writing to the newspapers that such a bridge was impossible—because nothing of the kind had been done before. At last the bridge was completed, and for twenty years it has been a constant thoroughfare for more traffic than anybody ever dreamed would exist.

But the bridge was no mere experiment. The engineers who drew the plans and calculated the quantity of materials needed to give certain results simply applied known and tested principles of construction; the new bridge was merely bigger than any that had been built before. Now a second bridge, of still longer span, stretches over the East river, and it causes no wonder.

The application of this to the rubber planting proposition may not be so remote as might at first seem. It has been abundantly proved that a rubber tree seed planted carefully by hand will grow into a tree not differing from the product of a seed dropped by nature and finding a chance place to germinate. It has been proved that the rubber product of such planted trees differs in no way from that of a rubber tree in the forest. Small plantations of rubber, of various species, in different countries, have produced rubber under conditions which point to a lower cost of production than in the richest forest areas exploited for this material along the Amazon, or anywhere else. Furthermore, the product of such cultivated trees, being cleaner and otherwise better prepared, has brought better prices in the markets.

It should not seem an unreasonable proposition, therefore, that if a few planted rubber trees grow well, a large number should grow equally well under like circumstances, or that if hundreds of trees on a given estate

yield at a certain rate, thousands of trees should yield proportionately more. The laboratory test of the tensile strength of steel suffices for estimating the dimensions necessary for a gigantic bridge, and what has been done with a handful of rubber trees is possible to be multiplied with a great number, particularly since the experiments with small numbers of trees have been in progress for more than thirty years, in many localities, and all point to practically the same conclusions.

It might be added that when a new invention in rubber is made, the owner of it does not wait to make and sell millions of specimens before determining whether the article has merit. Generally, if one or two give good results, it is assumed that all of an unlimited number would do equally as well, and the cost of manufacture is figured out in advance, instead of waiting until the goods are produced in great quantities, and the bills for material and labor are in hand. The leading planters of rubber have proceeded upon precisely similar lines in setting out millions of trees, in the hope of duplicating with so many the results obtained from a small number here and there in the past.

ON LOOKING FOR NEW RUBBERS.

THERE are perhaps 300 commercial grades or brands of crude rubber known to the trade. While it is true that many of these trade names are purely geographical designations, several of which are applied to rubber of identically the same class and quality, still the number of really different kinds of rubber marketed is large. Rubber is derived from many parts of the world, and from a large variety of trees, vines, shrubs, and even from the bark of roots, these different plants yielding widely differing products. Not only this, but the *latex* of the same tree, treated by varying methods, will yield rubbers not of the same quality.

While some of these grades are readily interchangeable in the factory, so that in the absence of a particular grade, its place in a given compound may readily be filled by another, there are very many other cases where in the production of a certain article of manufacture, if its quality is to remain uniform, and its cost the same, a particular kind of rubber is essential. These considerations apply to the lower grades no less than to the best sorts—to "Accra flake" as well as to "fine old Upriver Pará," which latter grade was quoted in our last issue at exactly three times as much per pound as the former.

Of course these statements are mere truisms to the manufacturer, who does not share the popular idea that all rubber is rubber, and that if one lot brings more money than another, it is due to the condition in which it is marketed. But our object in writing is to point out that perhaps the limit has not been reached in utilizing the lower classes of rubber or rubber-like gums.

The first rubber to be utilized to an important degree was of the Pará class, and so long as this sort was sufficient to fill the demand, and prices remained low as compared with present day figures, little interest was felt in

rubbers of lower grades. There came a time, however, when the industry was forced to adapt itself to the use of pretty much everything in the way of rubber that could be had. Indeed, it was found that for certain purposes Africans, for instance, not only served quite as well as the more expensive Pará, but even better. The combined consumption of other rubbers has now come to exceed that of Pará rubber proper; otherwise, the price of Pará must by this time have gone up to figures entirely prohibitive so far as many uses are concerned.

Now it must be understood that, practically speaking, the limit of production of native rubbers has been reached. At any rate, if the demand should continue to grow, no such increase of production can be looked for as will permit a marked decline in cost. It is important, therefore, to consider whether the utmost has been done in the utilization of the very cheap gums, the most important example of which, thus far, has been Pontianak. The use of this particular material is already very large, its extremely low price permitting of the making of certain compounds at a cost far below what would be possible without it, besides which the gum has distinctive merit.

Now if some of the other pseudo rubbers—and Pontianak gum is by no means alone in this class—should be exploited as carefully as this has been, it might be that they would also develop distinctive characteristics, just as higher grades of rubber differ one from another, and that a new compounding material would be found that would relieve the pressing demand for rubber and tend to lessen its cost. This is a field that should appeal to the rubber chemist, and in which he should have the earnest support of the manufacturer.

LITERATURE OF INDIA-RUBBER.

THE GUTTA-PERCHA AND RUBBER OF THE PHILIPPINE ISLANDS. By Penoyer L. Sherman, Jr., Ph.D. [Department of Interior, Bureau of Government Laboratories, Chemical Laboratory, Bulletin No. 7—1903.] Manila: Bureau of Public Printing. 1903. [3vo. Pp. 43 + maps and plates.]

A MONOGRAPH on the distribution of Gutta-percha species and the methods of extracting and marketing the product, together with a summary of the work done in connection with Gutta-percha in the government laboratories. A new method of refining gutta is described, which is expected to increase its marketable value.

THE first rubber journal in France is *Le Caoutchouc et la Gutta-Percha*, a monthly organ of the Caoutchouc and Gutta-percha and allied industries, including cable making, asbestos, vulcanized fiber, celluloid, etc., the initial number of which appeared March 15. The journal is devoted largely to technical articles, and to reports on sources of rubber in America and Africa, with full market reports. The director is M. A. D. Cillard fils and the editor-in-chief M. Pierre Breuil, besides which there is announced a list of principal collaborators, including some of the best known writers in France on topics connected with the scope of the journal, including MM. René Bobet and G. Lamy-Torrilhon. The annual subscription is 20 francs in France and 26 francs abroad. The offices are at 49, rue des Vinaigriers, X, Paris.

DE Paracaoutchoucboom in Azië (The Pará rubber tree in Asia). By A. H. Berkhout. [Review of the report by O. J. A. Collet noticed in THE INDIA RUBBER WORLD, December 1, 1903—page 80]. = *De Indische Mercur*, Amsterdam. XXVI-51 (December 22, 1903). Pp. 863-864.

MEETING OF THE MECHANICAL GOODS TRADE.

ON the evening of April 21 there was a notable and representative gathering of the officers of the various companies that manufacture mechanical rubber goods, at the Savoy Hotel, New York. The object of the gathering was largely social, which was inaugurated by a half hour spent in the spacious reception rooms, after which Mr. John J. Voorhees called for order and requested those present to nominate a presiding officer for the evening, a secretary, and treasurer. The following were unanimously elected: Amadée Spadone, chairman; William Hillman, secretary; Arthur F. Townsend, treasurer. Those present then adjourned to the banquet hall, which is by far the finest in New York, and sat down to a dinner that was perfect in all of its appointments, which included music, flowers, and a pleasing menu.

After the coffee Mr. Amadée Spadone arose, and, in a few well chosen words, introduced Mr. A. M. Paul, general manager of the Boston Woven Hose and Rubber Co., who had been invited to speak on "Some Abuses of the Trade," and had prepared a most interesting and practical essay, which was listened to with appreciation.

The presiding officer then introduced Mr. C. Edward Murray, president of the Crescent Belting and Packing Co., who explained that he was acting as an impromptu substitute for Mr. Welling G. Sickel, of the United and Globe Rubber Manufacturing Cos. Mr. Murray spoke earnestly and to the point, favoring some concerted action on the part of the manufacturers to remedy the abuses spoken of by Mr. Paul.

The Rev. Dr. Charles Herr was the next speaker, who in a very happy manner contrasted the old time cleric, viewing others of the cloth with bitter distrust, with the ministers of the present day who met, fraternized, and worked together. He saw no reason why members of the rubber trade should not in the same way adapt themselves to the modern spirit of coöperation.

The toastmaster then called upon several of the representative rubber men for an expression of their views including Mr.

B. G. Work, vice president of The B. F. Goodrich Co., Mr. William H. Acken, president, and Mr. John P. Ryder, vice president of the New York Rubber Co., Mr. John J. Voorhees, president of the Voorhees Rubber Manufacturing Co., Mr. Benjamin F. Elson, of the Boston Belting Co., Mr. James Boyd, of the Chicago Electric Hose Co., and Mr. A. D. Thornton, of the Canadian Rubber Co.

After this informal speech making, which was full of interest and often greeted with applause, the Editor of THE INDIA RUBBER WORLD was introduced. Mr. Pearson briefly reviewed the ground covered by the previous speakers and moved that a committee be named by the chair, to arrange for a permanent organization, to draft a constitution, and nominate officers. This motion was seconded by Mr. A. M. Paul and carried unanimously, the chair naming Messrs. John J. Voorhees, William Hillman, and Arthur F. Townsend to serve as the committee.

Letters and telegrams expressing regret at not being able to be present were received from Messrs. Henry C. Morse, H. D. Warren, Welling G. Sickel, W. T. Cole, E. L. Perry, and James Bennett Forsyth. The latter wired:

Should be glad to support any thoroughly honest, earnest, and well maintained efforts to improve conditions affecting the mechanical rubber goods business. Hoping banquet will be a success and that everybody will go home happy. JAMES BENNETT FORSYTH.

Those present were:

Boston Belting Co.=Benjamin F. Elson.
Boston Woven Hose and Rubber Co.=A. M. Paul, W. F. Foster.
Canadian Rubber Co. of Montreal.=L. E. A. Cholette, A. D. Thornton.
H. O. Canfield.=A. H. Canfield.
Chicago Electric Hose Co.=James Boyd.
Crescent Belting and Packing Co.=C. Edward Murray.
Diamond Rubber Co.=W. B. Miller.
Empire Rubber Manufacturing Co.=H. A. Baker, A. Boyd Cornell.

Eureka Fire Hose Co.=Benjamin L. Stowe, George A. Weis.
The B. F. Goodrich Co.=B. G. Work.
Grieb Rubber Co.=William G. Grieb, C. H. Oakley.
Gutta Percha and Rubber Manufacturing Co.=Amadée Spadone, Alfred A. Spadone.
Hamilton Rubber Manufacturing Co.=William L. Blodgett.
Hartford Rubber Works Co.=Lewis D. Parker, R. P. Parker, William Seward, J. W. Gilson.
Hodgman Rubber Co.=S. Theodore Hodgman.
Home Rubber Co.=Joseph O. Stokes.
THE INDIA RUBBER WORLD.=Henry C. Pearson.
Manhattan Rubber Manufacturing Co.=Arthur F. Townsend, Eliot M. Henderson, Alexander Henderson, F. L. Curtis.
Mercer Rubber Co.=William A. Minott.
National India Rubber Co.=Richard H. Pease.
New York Belting and Packing Co., Limited=J. H. Cobb, J. W. Macomb, C. H. Place, G. A. Smith.
New York Rubber Co.=William H. Acken, John P. Ryder, Henry F. Hering, Harry Montgomery, George C. Smith.
Peerless Rubber Manufacturing Co.=Charles A. Hunter, G. S. Taylor, James McGuffog, Frank Hardy.
Pennsylvania Rubber Co.=H. W. Du Puy.
Revere Rubber Co.=William Hillman, E. S. Williams.
Trenton Rubber Manufacturing Co.=A. N. Hammerstrom.
United and Globe Rubber Manufacturing Cos.=John S. Broughton.
Voorhees Rubber Manufacturing Co.=John J. Voorhees, J. J. Voorhees, Jr., Frank D. Voorhees, George F. Covell.
Whitehead Brothers Rubber Co.=Alfred Whitehead, William R. Whitehead.



AMADEE SPADONE, TOASTMASTER.

MENU.

	Huitres Pointe Bleue	
	Gumbo de Volaille, à la Créole	
Brauneberger	Canape de Crabs, à la Martha	
	Trouite de Rivière Sauté, Meunière	
	Concombres	
	Agneau du Printemps, Aromatiqué	
Haricots Verts, Maître d'Hotel	Pommes de terre, Dauphine	
	Ris de Veau, Braisé, Financière	
	Asperges, sauce Chantilly	
Cigars	Sorbet Château Montrose	
	Pigeonneau Rôti au Cresson	
	Salade Panachee	
	Glace de Fantaisie	
Petits Fours	Fruit	Café

ANNUAL MEETING OF THE NEW ENGLAND RUBBER CLUB.

ONCE a year the members of the New England Rubber Club get together to transact whatever business their annual meeting may call for, and to have a dinner or some sort of entertainment.

Through the courtesy of the Massachusetts Automobile Club, of Boston, their fine club house was given over to the Rubber Club for the evening of April 18, the date of the fourth annual meeting, and the main hall was crowded to overflowing, the attendance being over two hundred—the largest gathering in the history of the organization.

At 7.45 President Apsley called the meeting to order, and the following reports were read and accepted:

SECRETARY'S REPORT.

MR. PRESIDENT, AND MEMBERS OF THE NEW ENGLAND RUBBER CLUB: The last annual meeting of our Club was held at the Exchange Club, Boston, on the evening of May 15, being an adjourned meeting from the third Monday in April. President L. D. Apsley was in the chair. The reports of the secretary and treasurer were read and accepted, and the following officers elected:

President—L. D. APSLEY.
Vice President—ARTHUR W. STEDMAN.
Secretary—HENRY C. PEARSON.
Treasurer—GEORGE P. WHITMORE.
Assistant Secretary—ELSTON E. WADBROOK.
Directors—Costello C. Converse, Joseph Davol, Allen L. Comstock, A. M. Paul, John H. Flint, George H. Forsyth.

Reviewing briefly the year's record, it is pleasant to be able to report that the Club has grown in numerical strength, the membership reaching now to 179 members, divided as follows: 7 honorary members, 39 associate members, 133 resident members.

During the year past the Club has given three most successful dinners. First, the Mexican-American Fiesta, which followed the annual meeting at the Exchange Club; second, the Midsummer Outing at the Country Club, Brookline; and the third, a notable dinner at Hotel Somerset.

The object of the Club, that of social intercourse between members of the great New England rubber manufacturing corporations, seems to be fully realized, and the enthusiastic spirit with which the association was inaugurated some four years ago, seems in no way diminished.

Respectfully submitted, HENRY C. PEARSON,
 Secretary.

TREASURER'S REPORT.

RECEIPTS.

Bank Balance April 20, 1903.....	\$1,324.56
From Members for Initiation.....	70 00
From Members for Dues.....	728.15
From Members for Dinners.....	1,293.29
Total.....	2,091.44
	\$3,416.00

DISBURSEMENTS.

Dinners, etc.....	\$1,891.15
Flowers.....	88.40
Music and Entertainment.....	419.29
Prizes and Sporting Goods.....	30.50
Printing, Postage, etc.....	282.62
	\$2,711.96

Bank Balance and Cash on Hand April 18, 1904.....	704.04
Total.....	\$3,416.00

GEORGE P. WHITMORE,
 Treasurer.

APPROVED: J. Frank Dunbar, George P. Eustis, *Auditors*.

On motion of Governor A. O. Bourn the secretary was instructed to cast one ballot for the election of the following officers:

President—L. D. APSLEY.
Vice President—ARTHUR W. STEDMAN.

Treasurer—GEORGE P. WHITMORE.

Secretary—HENRY C. PEARSON.

Assistant Secretary—E. E. WADBROOK.

Directors—Costello C. Converse, Joseph Davol, Allen L. Comstock, A. M. Paul, John H. Flint, George H. Forsyth.

The president then introduced Mr. Henry C. Pearson, who described his recent journey to Ceylon and the Federated Malay States to see the great plantations of Pará rubber that are beginning to attract the attention of the rubber trade.

The story was illustrated by stereopticon pictures, which showed typical views of the cities, peoples, plantations, and wilds that were visited. One hundred and twenty pictures were shown, the lecture ending with a brief glimpse of Japan, which country was visited on the homeward journey.

At the close of the "Smoke Talk" the New England Rubber Club unanimously voted its thanks to the club that had extended its hospitality to them, and then proceeded to enjoy the eatables and drinkables that were served as a further evidence of the care that the Automobile Club takes of its guests.

NEW TRADE PUBLICATIONS.

THE INDIA RUBBER AND GUTTA PERCHA INSULATING CO. (Yonkers, New York) issue an illustrated catalogue of Habirshaw wires and cables, manufactured by them, which is comprehensive and accurate as to the text, and helpfully illustrated with a liberal number of cuts, showing sections of the various types of the Habirshaw cables. There are illustrations also of devices peculiar to this company, including the "bus bars" installed by them at Niagara Falls, and views of the interior of the company's testing room. This is an unusually handsomely got up trade publication, compiled by Mr. Frederick J. Hall, and copyrighted. [8"×10½". 23 pages.]

THE ATLANTIC RUBBER SHOE CO. (Providence, Rhode Island) have issued their initial trade announcement, in the shape of a net price list for 1904 of "The New Process Rubber Footwear", being the machine made rubber shoes. This first list shows cuts of a few of the lines of shoes manufactured by the company, the same being well executed, and indicating that an attractive line of goods is offered. The list includes Hurons, lumberman's overs, Perfections, leather tops (crome kip), wool boot combinations, heavy arctics, Omaha arctics, light jersey arctics, croquet Alaskas, selfacting Alaskas, storm Alaskas, men's selfacting overs, croquet overs, and storm overs. Net prices are given, with an announcement that the same are subject to change without notice. The trade will be interested to note these prices are somewhat higher than for goods offered under the same designations by the old companies. [3¼"×6". 12 pages.]

BANNER RUBBER CO. (successors to Monarch Rubber Co., St. Louis) issue their 1904 illustrated catalogue of Boots and Shoes under the title "A New Method of Buying," having reference to new policy of selling direct to the retail trade. Their first quality goods are branded "Sunset" and their second grade "Prairie Rubber Co." Prices are given on a special list. [7"×9". 28 pages.]

ALSO RECEIVED.

NEW YORK BELTING AND PACKING CO., Limited=Interlocking Rubber Tiling. List of places where it has been laid. 12 pages.

The Pure Gum Specialty Co., Barberton, Ohio.=Price List [of Drug-gists' Sundries; prices blank]. 12 pages.

RUBBER PLANTING IN CEYLON AND THE MALAY STATES.

As Seen by The Editor of "The India Rubber World."

SECOND LETTER.

Growth of *Hevea* Trees at Heneratgoda.—Their Yield at Various Ages.—Visit to Peradeniya.—Director Willis and His Work.—Canker Fungus in *Hevea* and its Treatment by Mr. Carruthers. Railways in Ceylon.—Plantation Scenes.—Leeches and Other Insect Pests.

A BULLOCK hackery is a small two wheeled cart, gaudily painted, with oilcloth top, no springs, and a seat on which sits the driver so close to the little hump-backed bullock that he easily twists his tail, or punches his ribs to make him trot, while the passenger, sitting back to the driver, clings as best he may. It is a most jerky mode of progression, as the bullock starts and stops with surprising suddenness; indeed, his whole progress is a series of jerks against which it is difficult to guard. Were it not for the little step behind on which one's feet rest, it would be impossible to hold on for more than five or six minutes. The bullock is a tough little beast, about four feet high at the shoulders, and is supposedly guided by a pair of rope reins that run through its nostrils. He is, however, more influenced by the half bark, half yell, of the driver, and the vigorous tail twisting that he indulges in on occasion.

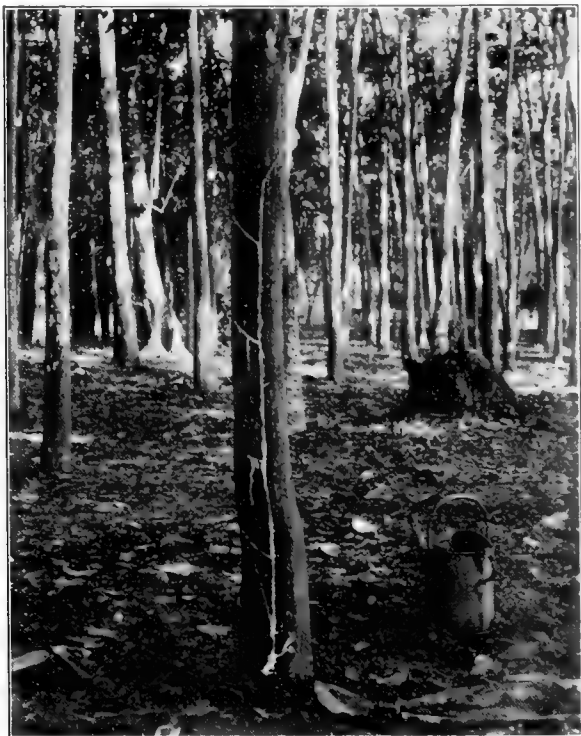
From the station I rode through a most densely populated native village, with narrow streets and a smell of stale fish that was simply appalling. Here we gathered a lot of flies, but as they ultimately settled on the bullock's hump, no especial annoyance came from their presence. Finally we reached the entrance to the gardens, turned in, and in due time found Mr. Perira, who at once put himself at my disposal. On the way he showed me some Ceará rubber trees which appeared to have

grown well, but as that tree in Ceylon has not proved profitable, it was to me of only transient interest. I did, however, measure one which was twenty years old, which was two feet in diameter three feet from the ground, and was probably 50 feet high. That it contained some *latex* I proved by cutting into it.

A short distance away, on a somewhat lower level, was a grove of *Heveas* 20 years old, 60 to 70 feet high. They were planted about ten feet apart, and had taken full possession of the soil, no weeds or grass growing in the dense shade they cast. The trees looked very healthy, with smooth bark and straight limbs, the branches appearing about 30 feet from the ground. There were about 300 trees in this lot. The trees have been tapped experimentally a few times, but are kept rather as seed bearers than rubber producers. The soil is gravelly, but seems to grow almost anything. The land is but 33 feet above the sea level, and the annual rainfall less than 100 inches.

Not far from here is the oldest planting of *Hevea* at this place. These are trees about 30 years old. They are fine specimens, and with massive trunks three or more feet in diameter. As a rule the trunks are straight single stems, but here several of the larger ones had huge divided trunks. I also had a look at a few specimens of the *Castilloa elastica*, but they did not appear to be doing well. I was also interested to see a good specimen of the *Landolphia florida*, which did not strike me as a vine that it would be at all profitable to cultivate.

It is here at Heneratgoda gardens that the first successful planting of Pará rubber occurred, and what is more important it is due to the eminent scientists in charge of this garden and



["Herring Bone" Tapping, at 13 years.]



[Tapping with Mallet and Chisel.]

PARA RUBBER TREES ("HEVEA BRASILIENSIS") AT HENERATGODA.



"HEVEA" AT HENERATGODA.

[Large tree in foreground on which tapping experiments were made for several years.]

that at Peradeniya that we have any sort of knowledge of the growth and productiveness of the *Hevea* tree under cultivation. Their work dates back to 1876 under Director Thwaites, when 70,000 seeds, sent from the Amazon to Kew gardens, London, were set out, only 4 per cent. of them germinating. From there about 2000 plants were sent in wardian cases to Ceylon in charge of an experienced man, Mr. W. Chapman, and 90 per cent. reached the gardens in an excellent condition. These were set out in bamboo pots and the next season were transferred from Peradeniya to Heneratgoda and flourished almost from the beginning, but the planters had set their hearts on the Ceará tree and paid but little attention to the reports that Director of the Gardens Dr. Trimen, Dr. Thwaites' successor, made from time to time as to their growth.

In 1883 several of the *Hevea* trees at Heneratgoda flowered and from the ripened seeds 260 plants were raised and distributed to various planters. One year later 1000 plants were raised in the same way and sent out.

In 1886 the Pará plantation at Heneratgoda was thinned out, all of the smaller trees being cut down, after which there was a noticeable improvement in the growth of the remainder. Seeds were sent that year to Jamaica, Madras, Rangoon, Penang, and the botanic gardens at Buitenzorg, Java, while from the crop of 1888 there were sent to the Straits Settlements some 11,500, together with 1000 to the Fiji islands.

Dr. Trimen made annual measurements of a typical tree at Heneratgoda which are as follows, the tree being planted in 1876. The measurements are circumferential and taken as is the custom three feet from the ground:

TRIMEN.	1880...	1 ft. 4 in.
	1881...	1 " 9 "
	1882...	2 " 1½ "
	1883...	2 " 6 "
	1884...	3 " 0 "
	1885...	3 " 7 "
	1886...	4 " 1 "
	1887...	4 " 5½ "
	1888...	5 " 0 "
	1889...	5 " 5 "
WILLIS.	1890...	5 " 9¾ "
	1891...	6 " 1 "
	1892...	6 " 5 "
	1893...	6 " 7½ "
	1894...	6 " 8 "

The first of the above measurements were taken by Director Trimen, and the latter by Director Willis, his successor, who says very justly that more useful data is secured by measurements that give the mean girth of all the trees. He therefore measured in 1897 forty-five trees that stand about 30 feet apart that were then 22 years old. The meas-

urement was taken at about 5½ feet from the ground. The largest tree was 7 feet 5 inches, the smallest 2 feet 1 inch, the mean girth being 4 feet ⅓ inch.

In this connection it is interesting to note the measurements of wild *Hevea* trees made by Robert Cross in 1877 near Pará. These trees had been tapped for from 5 to 15 years and their age was unknown. The figures are given in the margin.

All of these measurements were taken at three feet from the ground. It would seem, therefore, that the trees at Heneratgoda had about reached their growth.

It is as a seed bearing proposition that the garden I was visiting appealed to me most. A hasty bit of figuring gave me the total of between 3,000,000

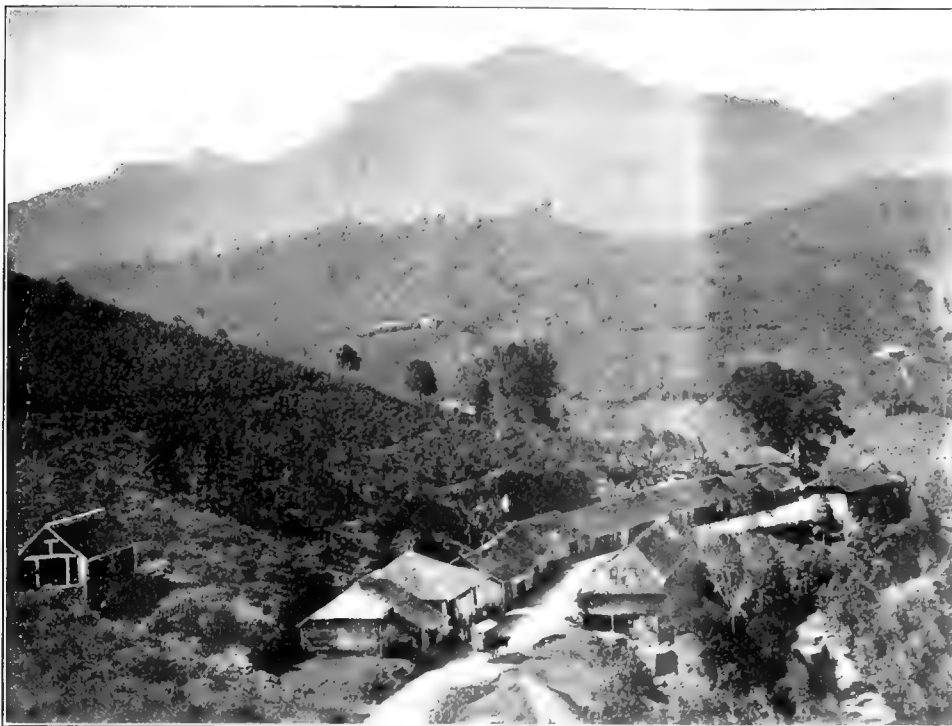
and 4,000,000 Pará seeds that had been sent out to planters all over the Eastern tropical world. A wonderfully practical piece of work and one for which the tropical planter should be devoutly thankful.

One of the few tapping experiments extending over a series of years were carried out at Heneratgoda under the late Dr. Trimen. He selected a twelve year old tree that was 50½ inches in girth, three feet from the ground. This was tapped the first, third, fifth, seventh, and ninth years, the product being 13 pounds 7 ounces of dry rubber. As in any of the tapping years but seventeen tapplings were taken, and they were well distributed through the twelve months, it would seem as if the tree might just as well have been producing every year instead of every other year, and that its average of 1½ pounds a year might just as well have been 3 pounds.

These experiments were followed by others by Director Willis, in which on smaller trees he secured on an average about ½ pound a tree, but where the trees were planted much more closely together. A curious fact in connection with the two experiments is that, supposing the Trimen trees had been tapped yearly and produced 3 pounds each, and the Willis trees produced ½ pound each, the result would mean the same pro-



SENSATION ROCK, NEAR KANDY.



AN UPCOUNTRY TEA ESTATE IN CEYLON.
[Great Western Mountains in the background.]

duction per acre, as the former trees stood 50 to the acre, while the latter were 300, in either case the production reaching 150 pounds per acre.

These yields, by the way, are not large, as Heneratgoda is not to be compared with other parts of Ceylon as a rubber raising locality. The many other and valuable experiments that were carried out here and at Peradeniya would fill volumes. Exhaustive experiments as to the kind of incision that gave the best results, whether the "herring bone," the X, the V, or the single/was the best, and hundreds of records carefully kept and compared to lead to the right conclusion.

Then, too, experiments by the score were made to find what part of the tree was the best to tap, whether near the base or

high up on the trunk. In addition to this a long series of experiments in the coagulation of the *latex* were instituted both by centrifugal machinery and by the employment of a variety of acids. It is due directly to this investigation that the Ceylon planter to-day, if he wishes to hasten the coagulation, adds a few drops of acetic acid to the *latex*. Nor were these experiments done in secret. The results were published and scattered broadcast among planters all through the tropical world, with wonderful results for good.

After a hasty look at the magnificent palms, of which the garden has more than 50 varieties, at the banana, pepper, and other plants, I resumed my hackery, and jolted back to the railway. As the return train was not due for half an hour, I went to the "Rest House," a hotel owned by the government and run by a trusty native, where I had an excellent breakfast. I paid the fixed charges, signed my name to the visitors' book, saying that I was

well pleased, and walking on to the station, caught the train back to Colombo. In the afternoon I hired a jinrikisha, and rode around the town. These "rickshaws" are simply huge perambulators drawn by a half naked coolie who trots along all day content with 10 cents an hour (gold). Most of the rickshaws are old and rattley, but a few lately introduced have pneumatic tires, and it is only a question of time before they will all have them.

As Director Willis had been good enough to invite me to make my home with him when I went up country to visit the Peradeniya gardens, and as I had only one suit of white flannels, I got the tailor at the Galle Face to make me another. I was measured in the morning and the suit delivered that even-



PERADENIYA GARDEN ENTRANCE.



"FICUS ELASTICA," PERADENIYA GARDEN.
[Showing spreading buttressed roots.]



PERADENIYA GARDEN.
[Planted *Castilloa elastica* and cacao.]

ing. It cost 10 rupees [=about \$3.64] for the making, and the man who delivered it got 2 rupees, because the tailor, his master, was such a hard man to work for, and the boy who was with the man who delivered it got 1 rupee because of some affliction that he had suffered, and the dog that accompanied the boy who was with the man—well, he didn't get anything, but I vow he sat up and begged just as long as I was in sight.

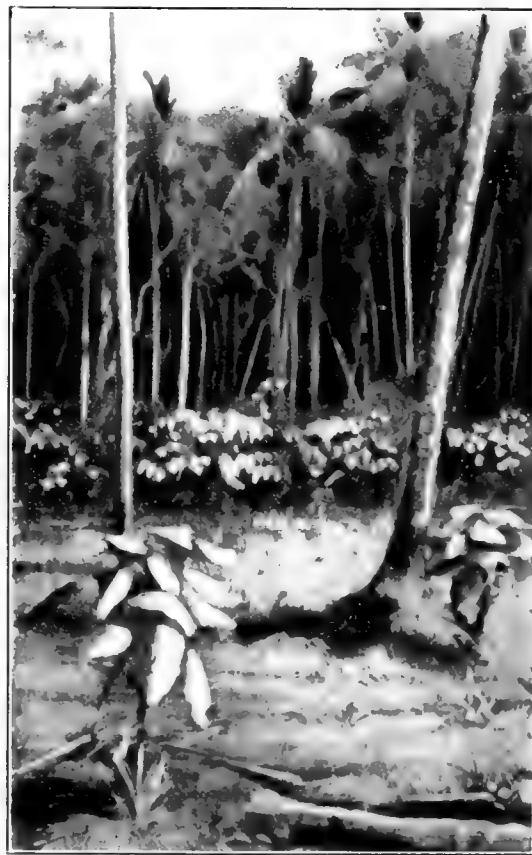
I made an early start for Peradeniya, which means "guava plain," going by the government railway in a very comfortable first class car that is a sort of compromise between the American smoking car and the English compartment car, and about half the size. The government railways, by the way, are pretty generally good in Ceylon. The equipment is all that could be expected, although the cars are small; the freight cars, for example, being 12 ton affairs with corrugated iron roofs, and the locomotives look very light. The railway stations, however, are extremely good, and in most of them a white man need not wait at the ticket window, but may march into the agent's sanctum, and get his ticket before the natives are served. The profits that the railroads earn is expended on the carriage roads, a plan that some praise and some condemn. Anyhow, the latter roads are first class, and an automobilist could go from one end of the island to the other if the elephants did not object.

Soon after breakfast we were bidden to the "refreshment carriage" where a good breakfast was served for about 60

cents. After breakfast I sat on the shady side in my car, and took note of the great paddy fields in which sullen water buffalo wallowed and fed, and where natives clad only in breechcloths, and daubed from head to foot in clayey mud, toiled in a half hearted way. Soon after the scenery became more interesting as we climbed to higher ground, the road running above a winding valley where great stretches of jungle were broken by banana and rice plantations, with occasional glimpses of splendid government carriage roads, with rugged mountain ranges in the distance.

Every now and then we stopped at a neat railway station, crowded with natives, interspersed with a few Europeans, for whom, by the way, the first class waiting rooms and cars are always reserved. Between Polgahawela and Rambukkana, by the side of the track, is a very considerable plantation of *Hevea*, covering some sixty acres, the trees being planted about 8 feet apart. They are about three years old, and would average for a guess 30 feet in height.

Further on, as we still ascended, the valley below was often a series of terraced paddy plots for miles. Then as we still skirted the valley, which was farther and farther below us, we crept through many tunnels, clung to the sides of precipices, getting occasional glimpses of Adam's Peak, the famous mountain of the island, and still far below, we saw winding through the jungle—crossing rivers—the white roads, hard, smooth, wide, equal to any park roads at home, and then up, up, we climbed, the



PERADENIYA GARDEN.
[*Castilloa elastica* planted among cocoanut palms.]

cabbage palms, bread fruit trees, and tropical growths now finding their home on the rocks, or in the wash of steep mountain ravines. The air was rapidly growing dryer, a decided relief after the steamy atmosphere at the sea level; nor did I note the heat as I leaned out to see as much as possible of the great



EXPERIMENT GARDEN, PERADENIYA.
[Clear rubber in foreground.]

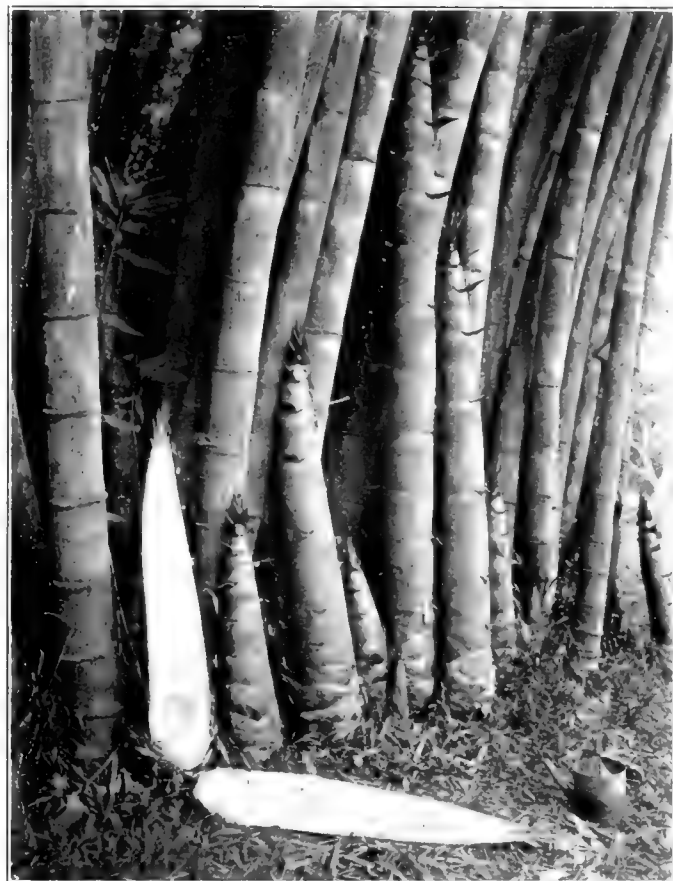
tea plantations that now filled the valleys, and encroached often on the steep hill and mountain sides. The soil, where it was in evidence, had a reddish look, and would not suggest fertility were it not for the luxuriant growth it produced.

After a journey, full of intense interest, we reached Peradeniya station, and alighting from the train found Director Willis awaiting me. One of his coolies took my luggage in charge,



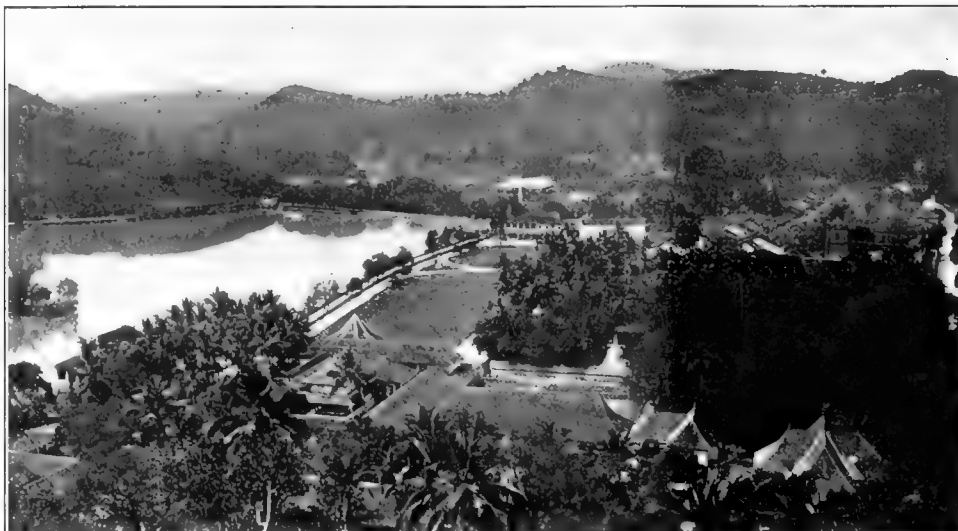
PERADENIYA GARDEN.
[Mr. Carruthers inoculating a young *Hevea* with Canker fungus, December, 1903.]

while his master and I walked up the broad shaded road that runs by the beautiful entrance to the Royal Botanic Gardens. A few minutes brought us to the Willis bungalow, a very pretty two story house, set on a little eminence, and hemmed in with foliage plants, flowers, and magnificent shade trees. As the new governor of Ceylon, Sir Henry Blake, had requested the presence of my host in Colombo, he turned me over for the moment to Mr. J. B. Carruthers, F.L.S., the mycologist and assistant director. Mr. Carruthers, by the way, had but just returned from a month's visit to various *Hevea* plantations, where he had been studying the canker that had appeared upon some of the *Hevea* trees. He was of the opinion that the alertness of the planters in discovering the disease in its first stages, and calling for expert advice, would result in its extinction before serious harm came to the trees.



DENDROCALAMUS GIGANTEUS.
[Giant bamboos in the Peradeniya Gardens, showing the young shoots, and a section of one.]

The disease, although new to the *Hevea* as far as known, has long been an enemy to apple trees, cacao, tea, etc., and frequently kills the tree or shrub upon which it grows. Mr. Carruthers, when first it appeared, examined portions of diseased trees, and recognized the fungus as a species of *nectria*. He then visited both the government plantations of *Hevea* and the larger private plantations. In one district, Kalatura, he found only one tree in 200 affected, but on the Edengoda estate, 20 per cent. of the trees were diseased; while at Yatiporua there were 40 per cent. The appearance of the fungus on the trees is a swelling or roughening of portions of the tree trunk or branches. If the outer bark is cut off, the tissue beneath shows at first a neutral tint, and later a brownish or claret color. When the fruit of the fungus ripens it is a very minute red dot which is carried by the wind, by water, or by tree insects, to a moist



KANDY—LADY HORTON'S WALK.

spot on the bark of the same or another tree, and there it thrives, and soon fills the tissues with its *mycelium*.

It was practically eradicated by cutting out the diseased portions and the burning of them. This is best done in dry weather. Nor did the cutting of the trees appear in any way to weaken them or hinder their growth. Mr. Carruthers had brought with him some cultures with which he proceeded to inoculate a young *Hevea* tree, while I stole away into the grass with my back to the sun, turned my kodak upon him, and pressed the button. A moment later, happening to glance downward, I saw that the grass was fairly alive with leeches, all making their way toward me. I retreated very hastily, and at once began a frantic search for them about my person. I found a lot on my shoes, trousers, and outer clothing, but was lucky enough to remove the last one before getting bitten.

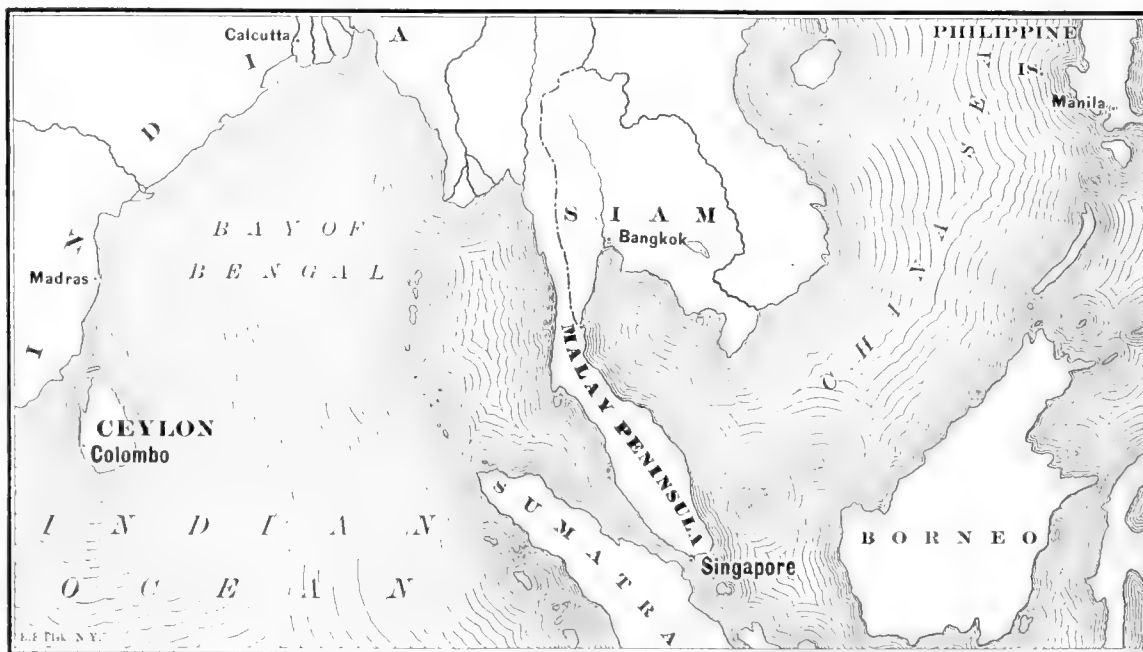
Speaking of insect pests, there are very few in Ceylon that are troublesome to man—at least I saw or felt but few. The mosquito was of course more or less in evidence, but I did not get too badly bitten. I did, however, resent its mode of attack.

It does not approach you with a song, but, in a silent crafty, suspicious way, alights, bites, and flees. So suspicious is the creature that it is almost impossible to clap it on the back, as is the custom in America when he has succeeded in puncturing one's epidermis. It, therefore, has no friends, and beds everywhere are enclosed in huge muslin screens; otherwise one would be constantly bored.

There is also the leech. It lives, not in the water, but in the grass and in the jungle. When exercising on an empty stomach, it is very small, about the diameter of a knitting needle, and from $\frac{1}{4}$ to $1\frac{1}{4}$ inches in length. On hearing footsteps, it hastens toward the sound, getting over the ground at a surprising rate of speed for so tiny a creature, and without hesitation attacks instantly. If left to themselves, they fill themselves with blood, swelling to the size of one's little finger, and then drop off. Nor does this end the incident, for during their meal they inject something into the veins, which keeps the blood from clotting, and the wound therefore remains open and goes on bleeding. If roughly removed during feeding,

it is very apt to leave its teeth in the wound, which causes inflammation, and in some cases, troublesome sores. The best way to treat them is to wear close knit stockings, into which the lower ends of the trouser legs should be tucked. This keeps most of them off, but if they do get on one, a few drops squeezed from a fresh lime makes them let go at once. Many of the natives, who expect to encounter leeches, carry a lime or two about them. Others simply pull them off, and take the chance of the wound inflaming. In certain districts these leeches are a great pest, but as the land comes under cultivation, they gradually disappear. It is said that during the conquest of the island by the British, many a private soldier lay down in the jungle after an exhausting day's march and never awoke, his veins being literally drained dry by the swarming leeches. They are as tough as if made of India-rubber, and about the only way to kill them is with fire. If cut in two the separated parts will join together again, and they are always voracious, active, and absolutely devoid of fear.

[CONTINUED NEXT MONTH.]



MAP SHOWING POSITION OF CEYLON AND THE MALAY STATES.

VARIOUS RUBBER PLANTING COMPANIES.

REPORT ON PLANTATION "RUBIO."

THE report of the official inspector chosen by the subscribers to the bonds of the Tehuantepec Rubber Culture Co. for the year ending December 31, 1903, Mr. Grosvenor Calkins, an attorney of Boston, Massachusetts, covering his visit to the plantation made in January last, and now appearing in pamphlet form, is the most definite and comprehensive document of its kind that has yet been issued by any rubber planting company operating in Mexico. It is a thoroughly businesslike statement, composed of details capable of verification, and thus of interest and value as a record of progress in this new industry.

Mr. Calkins begins by saying: "No cultivated rubber has yet been produced in quantities in tropical Mexico. On the other hand, rubber trees have for some years been grown experimentally. These tests have already established two important facts: First, that conditions are favorable to the rapid growth of cultivated rubber plants, and, second, that these rubber trees will yield marketable rubber. The general conditions favorable to the cultivation of rubber, namely, a well drained soil without shade, have also been determined. The Rubio plantation consists of two series of hills draining into rolling valleys from which all shade has been removed."

Other considerations bearing upon planting conditions are then treated at length, after which the inspector summarizes the estimates obtained from various American planters in Mexico, of the lowest yields for cultivated rubber trees at different ages:

Average 6 year tree will produce without injury 4 to 6 ounces of rubber.

Average 7 year tree bled to death will produce about 1 pound of rubber.

Average 8 to 10 year tree will produce without injury at least 1 pound of rubber.

The planting during the two years 1902 and 1903 is reported on in detail, with a statement of the condition, good or otherwise, of the several different tracts. The planting in 1902 amounted to 1499 acres, on which, allowing for failures, there are now estimated to be 1,600,000 plants. It is noted that the height of the trees grown from seeds—about 65 per cent. of the whole—is greater than that of transplanted or replanted trees. The planting in 1903 amounted to 520 acres, on which, after again allowing for failures, there are 595,000 plants. The number of plants, of course, is much greater than will be allowed to stand permanently, but it has not yet been decided at what age to begin thinning out.

"In order to protect the young plant from being cut at the first weeding, it is necessary in some way to indicate the location of the plant. In the 1902 planting the usual practice of marking the young plant with a stake was resorted to. In the spring of 1903, Manager Luther devised the plan of planting corn to mark the rubber. The corn developed more rapidly than the rubber, saved the expense of staking, was easily and economically harvested, and produced a yield which went far to supply the whole plantation with this essential commissary item. As the price of corn on the isthmus has been very high this year, the saving effected by this device has been considerable."

The harvesting of corn in 1903 from the spring planting was about 8500 bushels. A still larger planting of corn was made

in November and December. The average number of laborers employed during the year was 327, exclusive of cooks, at a cost, including commissary, of \$135,468.93, Mexican, which was exclusive of cost of superintendence, new construction, office expenses, and general maintenance.

Mr. Calkins concludes: "The opinion has been universally expressed by every person qualified to express an opinion that large returns are assured from rubber culture, provided that there is sufficient capital and patience to wait ten years, if necessary, for returns."

THE TULIJA RIVER PLANTATION CO.

[Plantation "Tulija," department of Palenque, state of Chiapas, Mexico. Office, 903-904 Old South building, Boston, Massachusetts.]

INCORPORATED under the laws of Maine; paid capital stated at \$100,000. Own 6177 acres on the river Tulija, in Chiapas, Mexico, 50 miles from the town of Salto. They offer for sale, at \$300 each, payable in installments, 1000 certificates, representing 1000 acres, which the company undertake to clear and plant to rubber, 200 trees to the acre, and care for the same for 10 years, after which the investor may take title to the land. Meanwhile certificate holders will be entitled to one half of the net profits during each year. Officers: *Elisha H. Brewster*, lawyer, Springfield, Mass., president; *Ethan H. Cutler*, former European selling agent United States Rubber Co., now of Newton, Mass., vice president; *David Allen Reed*, real estate, Springfield, treasurer; *Alfred W. Faithfull*, Boston, secretary and general manager.

MR. VERNON BACKUS ON MEXICAN PLANTING.

THE *Mexican Herald* (February 29) contained an interview with William Vernon Backus, a banker and former lawyer of Cleveland, Ohio, and who is now an extensive investor in Mexican development enterprises, in which it is intimated that several projected rubber plantations in that country have been abandoned. But no rubber plantation company has failed, he says, through inability to raise rubber in Mexico. "Rubber was first discovered in Mexico [in Columbus's time] and anything that grows native to the soil without cultivation can be grown and improved by cultivation." He intimates that some companies have failed through the lack of intelligent management of their business affairs—such as devoting their capital to the making of improvements without paying the purchase price when due, with the result that the land and improvements would revert back to the former owner. Another mistake has been in filling the offices of some companies with men of wide acquaintance with possible investors, rather than men especially qualified for the business to be done. Mr. Backus said that his investments for the last eight years have all been made in Mexico, and his future investments will be made there, because of the good administration of the laws and the protection afforded to property there. Mr. Backus is now interested in three Mexican plantations which include rubber.

PLANTATION SUPPLIES FROM NEW ORLEANS.

A NEW ORLEANS newspaper mentions the purchase in that city of a considerable quantity of supplies in behalf of a rubber planting company having an estate in Mexico, and a contract for the shipment of further supplies during the year. The purchases included groceries, all sorts of household furnishings, and tools and agricultural implements. The same company also made purchases of live stock for breeding purposes.

Hitherto the rubber planting companies in Mexico have bought their supplies chiefly in St. Louis and Chicago. The newspaper referred to asserts that equally favorable prices can be quoted by New Orleans merchants, while lower freights can be obtained. The newspaper continues: "There are something like 25 large rubber plantations in Mexico, and if all of the trade of these plantations is attracted to New Orleans, it will mean an increase of at least \$2,000,000 in the export business of the city."

BADGER MEXICAN PLANTATION CO.

[Plantation "La Florencia," near Santa Lucrecia, state of Vera Cruz, Mexico. Office: Robinson building, Racine, Wisconsin. See THE INDIA RUBBER WORLD, May 1, 1903—page 254.]

THE company named above is incorporated under the laws of Maine, with \$1,050,000 capital authorized, of which \$210,000 has been used for the purchase of lands, with valuable improvements, from the Badger Mexican Planters' Co., a corporation under the laws of Wisconsin, the purchasers of "La Florencia" from Samuel D. Dorman, and neighboring property. These lands lie in the Trinidad valley, on the Vera Cruz and Pacific railway. On "La Florencia" are 25,000 coffee trees in bearing and 25,000 rubber trees now from 3 to 7 years old, some of which have yielded satisfactorily this year, and 25,000 rubber trees planted in 1903. A large planting of rubber has been contracted for this year. Upon an adjoining tract preparation has been made for planting 400 acres of sugar cane. Mr. Dorman has been made resident director of the plantations. The coffee planting on "La Florencia" will not be increased, but it is intended to increase the rubber plantation to 1000 acres. The company named in the heading of this article is offering treasury stock for the purpose of providing for the new development work in progress, which is being conducted by the other company named—the Badger Mexican Planters' Co. The officers of the former are: W. W. Allis, president; P. M. Wackerhagen and Charles E. Seiler, vice presidents; W. E. Fish, secretary; Charles R. Carpenter, treasurer; William S. Fish, assistant treasurer.

SELANGOR RUBBER CO., LIMITED.

THE headquarters of this plantation company are at Glasgow, Scotland, but the principal shareholders are Ceylon planters who took up lands in the Straits Settlements for the use of the company. The capital is £30,000, of which, at the end of 1902, only £16,500 had been called up, and the expenditure to that date had been £15,911. The company had to show for this the following acreages of Pará rubber trees:

	Acres.		Acres.
2 to 5 years.	215.5	7 months.	239
3 to 3½ years.	138.5	New planting.	67
2¾ years.	146.		
2½ years.	163.5	Total.	1006
1½ years.	36.5	[About 200,000 trees.]	

The oldest trees averaged about 25½ inches in girth three feet from the ground, and the three year old trees, 12½ inches. This is said to be one of the most promising Pará rubber estates in the Far East, and the £1 shares are quoted at £3. A director in the company, writing to THE INDIA RUBBER WORLD, says: "As to your remarks with reference to the Ceylon 'Pará' rubber, you will find that, like all the products put on the market by the Ceylon planters, it will prove to be the finest! Witness coffee, tea, etc."

BUKIT RAJAH RUBBER CO., LIMITED.

REGISTERED in London, with £70,000 capital, in £1 shares, to acquire the estates in the district of Klang, state of Selangor, on the Malay peninsula, known as Bukit Rajah, Sungei Binjai, New Eskdale, Delabole, Bukit Duku, and Booneans, to plant and cultivate India-rubber, Gutta-percha, and other native products. The first directors are H. K. Rutherford, N. W.

Grieve, G. A. Talbot, and C. B. Rendle. Registered office: 20 Eastcheap, London, E. C., which is the headquarters of the Ceylon Tea Plantation Co., Limited, one of the important tea planting companies with which Mr. H. K. Rutherford is identified.

RANI RUBBER CO., LIMITED.

REGISTERED to take an assignment of a lease of 500 acres of government lands in the state of Travancore, British India, to George Nicol Thomson, and to convert the same into a rubber plantation. Nominal capital, 300,000 rupees [= \$97,330], in 3000 shares. The subscribers to the articles of agreement are all residents of Colombo, the first directors being the Hon. J. N. Campbell, A. A. Prideaux, G. N. Thomson, and J. G. Wardrop. Travancore is a small native state, ruled by a maharaja, under British control, at the southern extremity of India, and near the island of Ceylon.

MEXICAN MUTUAL PLANTERS' CO.

[Plantation "La Junta," Sanborn postoffice, state of Vera Cruz, Mexico. Offices: New York Life building, Chicago.]

MR. JAMES C. HARVEY has been appointed manager of this estate, which embraces one of the most important of the commercial rubber plantations in Mexico. With Mr. Harvey's record in rubber planting, readers of THE INDIA RUBBER WORLD are familiar, he having developed an extensive private plantation of rubber at a point not far from the "La Junta" estate, and in which he retains his interest. Mr. Harvey succeeds Mr. George B. Mann, who had been plantation manager since the organization of the company in 1898, and who resigned recently to devote his attention to real estate and other private interests in Mexico. A large amount of planting of rubber is being planned at "La Junta" this year.

TEN YEAR OLD "CASTILLOA" IN MEXICO.

A RUBBER plantation of 20,000 trees planted ten years ago is reported to exist near Playa Vicente, in the district of Cosamaloapan, state of Oaxaca, Mexico. This plantation, known as "Mano Marques," is owned by the L. & H. Pinto Co., Limited, of London. The *Mexican Herald* quotes Lyonel Pinto, who has been recently in Mexico, to the effect that some of these trees were tapped for the first time in May, 1903, and the entire product sold to the Castle Rubber Co., Limited (Warrington, England), who made a favorable report on the same. It is intended this spring to tap a larger number of the trees.

* * *

MR. JOHN A. MORTON, for some time connected with large rubber planting companies in Mexico, has associated himself with the Costa Rica Rubber Co., and has gone to Costa Rica to take charge of a *Castilloa* proposition at the company's plantation. The headquarters of the Costa Rica company are at Los Angeles, California, and their plantation at San Carlos.

RUBBER PLANTING COMPANY PUBLICATIONS.

THE Tehuantepec Rubber Culture Co., New York.—Report of Official Inspector, Grosvenor Calkins, for 1903. 16 pages.

Conservative Rubber Production Co., San Francisco, California.—Bulletin No. 5 [Report of first annual inspection, by A. M. Foulks, committee for shareholders; Plantation "Ystilja," state of Chiapas, Mexico, mentioned in THE INDIA RUBBER WORLD February 1, 1903—page 153.]

The Badger Mexican Plantation Co., Racine, Wisconsin—(a) A Milestone Upon the Highway of Progress. 30 pages. (b) Convincers. 20 pages. [Prospectus and plans of a rubber and sugar planting enterprise.] Mutual Rubber Production Co., Boston, Massachusetts—Bulletin No. 10 [of progress on the estate in Chiapas].

Orizaba Rubber Plantation Co., Chicago, Illinois.—Report to the Certificate Holders by Mr. Howard Little, Inspector. Also, Supplementary Report by the President, Mr. J. B. Sanborn. April, 1904. 16 pages.

Isthmus Rubber Co., New York.—Investments, 12 pages.

THE MANUFACTURE OF SHOE LASTS.

THE coming molded rubber shoe may, in the course of time, render maple lasts superfluous but, until then, in every variety of style, width, and size, they will continue to hold an important place as one of the expensive accessories of the rubber shoe industry. The lumbering for maple timber from which shoe lasts are made takes place in the woods of northern Maine and Canada.

The felling of the trees is done in winter when the sap is down out of the trunks, and the snow covered ground affords good hauling. The trees are very carefully selected, because not all maples are adapted to make good last blocks. The best variety is the rock maple, better known as the sugar maple. The trees are cut for last blocks where it does not pay to continue the manufacture of maple sugar. The habit of the rock maple is to grow in clumps or groves, oftentimes many miles apart, which greatly increases the labor and hardship of lumbering. It is a strenuous sort of life, fifteen or twenty miles back in the bush, felling trees in the snow, with the temperature 15° below zero. It sometimes happens that unusually heavy snowfalls will cut the camp off from supplies of fodder for the animals and necessitate killing them.

After felling and trimming, the timber is hauled on runners to central points near camp and there cut, generally by horse power with a drag saw, into block lengths. The bark is removed from these sections and they are then marked on the end with the pattern of the block desired. With these outlines as guides, the tree section is carefully split into blocks of the



FIG. 1.

general shape shown in Figure 1, which represents the side and both end views of a rough block as they are usually cut.

The work of splitting is carefully done by holding a broad axe on the mark, while it is struck by a blow from a wooden mallet or beetle. When thus roughly split the blocks are packed for seasoning or air drying in open sheds, for nearly two years. Following this long interval of open air drying, comes a period of three months in a warm kiln at the last factory before they are ready for the turning lathe. Indeed, they generally go from the kilns to a drying room of lower temperature, where they are kept in stock and from which they are selected and removed as needed for turning.

The standard irregular turning lathe shown in the illustration is one of the notable inventions of the nineteenth century. It has undergone improvements which make its capabilities still more remarkable to-day than when first invented. On these machines such irregular forms as shoe lasts, hat blocks, gun stocks, and many other unsymmetrical shapes are turned, not only to the exact dimensions of a given model, but in various gradations of sizes, larger and smaller, or right or left, in which the proportions of the model are perfectly reproduced. The machine is known as an "improved reverse last lathe." It is an American invention, the result of forty years of experience, and in general use for last turning in this and many foreign countries.

The machine turns both "rights" and "lefts" accurately

from one model, and grades five sizes both larger and smaller than the model size. The capacity varies from 50 to 100 pairs per ten hours, according to size and fineness of feed. It requires about 1½ horse power to operate it. The speed of the cutters varies from 4500 to 5000 revolutions per minute.

The principle on which the machine operates is not difficult of comprehension. The model last is centered in one side of a

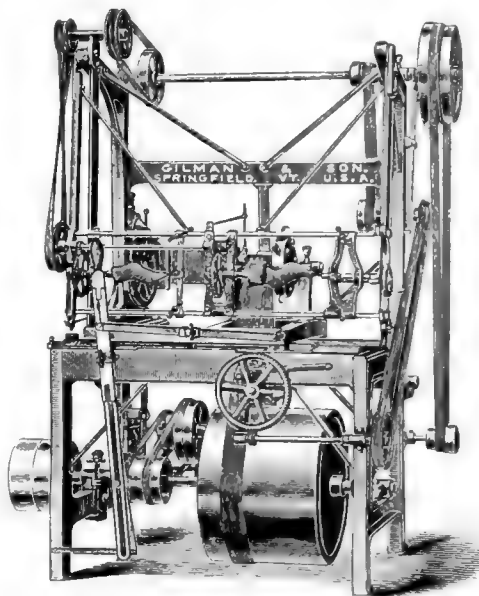


FIG. 2. LAST LATHE.

the model and in contact with the cutting wheel or head. The swing of the frame is determined by the contour of the model and as the latter rises and falls on the face of the guide wheel the block also similarly advances and retreats against the cutting wheel and a duplicate of the model is cut in the block.

Variations in size or width and in right or left are simply a matter of detail in adjustment. The cutters on the face of the wheel are gouge shaped and several in number and are adjusted each in advance of the preceding, thus making a progressive cut capable of removing rapidly a considerable depth of wood. Immediately around the cutting wheel is arranged a

swinging frame, and the block to be turned, roughly cut on a circular saw to approximate dimensions, is centered in the other side of the frame, on the same axis. The model rests against a guide wheel and as each revolves the latter also travels, by an adjustable feed, lengthwise, thus traversing the entire area of the model. The block to be turned revolves in unison with



FIG. 3. COLLECTION OF LASTS.

sheet metal hood connected by piping with a powerful exhaust fan for removing the turnings as fast as they are produced. The rough blocks assume the fine lines and contour of the model with fascinating exactness and rapidity, and come forth in five minutes or less, perfect reproductions of the original.

The illustration of last blocks and lasts (Fig. 3) shows three lasts with the "centers" attached as they come from the lathe. These "centers" are the supports on which the block revolved, and are removed by means of the "block knife"—a sort of long handled cleaver, which is supported at one end in a ring bolt, which affords a fulcrum on which to get a leverage to slice off the hard wood and trim down to size.

After this trimming the toe and back of the heel are carefully shaped with a spoke-shave and wood rasp to the exact dimensions of a pattern or metal template. Following this the last is scoured or smoothed on a sand wheel, to remove the fine grooves on the surface caused by the "feed" or progress of the cutters over the surface. Next they are stamped on the bottom with width and size marks and the tops bored with a pair of holes which serve to hold the last on the shoe rack when in use.

The average life of maple lasts in daily use in a rubber shoe factory is about two years. The frequent long continued heat of vulcanization gradually disintegrates the wood and slowly chars it, causing the sharp edges to gradually wear away with frequent handling, none too careful at best. With the sharp edges gone, the last has so far departed from the shape of the model that it is practically useless for shoe making, and ends its mission as fire wood. The edges of the model are carefully protected against wear in the lathe by a series of iron brads inserted along all edges, and filed up true to form, in effect, a metal edge.

PRODUCTION COST OF INSULATING TAPE.

BY AN EXPERT.

IT is perhaps twenty-six years since it was first found that calendered friction cloths were useful in electrical construction, when wound in convenient rolls of narrow width.

Up to five years ago this steadily increasing business was divided among the mechanical rubber plants, and possibly the average output was at the rate of 500 pounds per day. High prices prevailed, and until 1895 little or no tape was sold below 35 cents. Between 1890 and 1895 the prices were hammered down to 25 cents, and since that time have frequently touched 17 cents, with some misguided lambs occasionally breaking to 16 cents per pound.

Bear in mind that during this period the price of crude rubber was continuously advancing, and that to-day tape manufacturers are paying 100 per cent, or over more for their soft rubbers.

The recent advances in cotton, nearly 100 per cent. in four years, should also receive attention. Still the largest concerns who now handle tape have not made advances of over 10 per cent. in their prices, and are held down to that point by the reckless competition of small plants that, with a capital for getting perhaps an average of orders for 500 pounds per day, do not hesitate to suppose themselves capable of quoting lower prices than the big producers that average 3000 pounds per day.

It will readily be seen that all are on about the same basis in the cost of materials. The cheapest compound that will stay sold costs 5 cents per pound and cotton is worth .2430 per pound in the 40" width, the grade used by all.

On the cheapest grades 4 pounds of compound is loaded on to each pound of cotton, producing a tape costing .0886 per pound for material alone. The old fashioned manufacturer of rubber goods would doubtless consider that between the above

cost and a selling price of 17 cents there was an ample margin of profit.

It is, therefore, of great interest to note the information which careful factory cost keeping gives when supplemented by general bookkeeping.

The figures were given by one of the largest tape manufacturing companies and are based on sales of about half a million pounds. The tape was of many different grades and made in a general rubber goods plant which has special facilities for low operating expense.

Express and freight bills (tape sold delivered).....	\$ 3,122.90
Taxes (apportioned).....	581.89
Insurance.....	298.73
Rent.....	590.39
Merchandise discounts.....	573.48
Telephone services and telegrams.....	179.96
Coal (power).....	1,143.33
Packages (shipping department materials).....	2,297.10
Tin foil and cartons.....	3,728.86
Commissions to agencies.....	2,060.89
Traveling expenses.....	2,827.16
Interest.....	2,385.79
Unclassified expense.....	993.56
Bad accounts.....	33.49
Postage.....	230.68
Labor and salaries (executive).....	8,936.50
Labor and salaries (productive).....	12,088.55

Total expense items..... \$42,073.26

Total expense item cost per pound..... \$.0883

Crude cost per pound0886

Net cost of tape per pound..... \$.1769

It is to be regretted that the "factory waste" item is not included in this account, "being too mixed up with the other business going on to apportion accurately". Pressed for an estimate, a figure of \$900 was given, which is manifestly low enough, as there is no item for "returned goods," "bad goods," and "experimental work". Leaving out these important items, the "factory waste" estimate brings the expense items up to .0909 and the total manufacturing cost of the cheapest pound of tape to \$.1795.

That these figures are of value there can be no doubt. A new concern which could scarcely hope to secure a business of over 500 pounds a day for the first six months would have an expense cost far above this, to say nothing of an advertising expense besides.

When it is considered that at least two factories are doing a business of over twice the total on which this article is based, and that their increased output saves them only about 2½ cents per pound in their expense items, it will be seen that they can and do earn a handsome income while selling below any competitor's actual cost. Evidently they are amply satisfied with a net profit of about 2 cents per pound.

EDITORIAL NOTE.

THE above article was written by one who is heartily tired of competition by those who apparently do not know how to figure factory costs, and with the idea of giving them, if such there be, a chance to think. A careful analysis of it leads one to think that he has made out a strong case, but not as strong as it might be taking his own figures. For example, his item for power, \$1143.33, does not seem enough. To do the work indicated a washer, two mills, and a calender are necessary; in other words a 100 HP. plant, which would ordinarily cost nearer \$4000 a year than \$1100.

Then, too, the "bad accounts" is very very small. If the company under consideration sells to the little dealers, it might easily be many times \$33.49. As a matter of fact, the business under discussion reaches to about \$100,000 a year, and it would

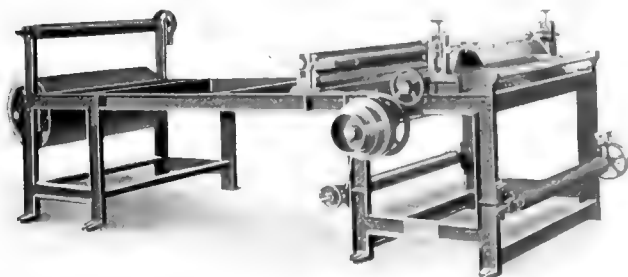
be beautifully handled if the bad accounts did not reach to at least \$1000, or 1 per cent. of the total.

The writer acknowledges that he has no figures for "returned goods", "bad goods", or "experimental work", which are even larger items than he appears to realize. In experimental work alone in a business of this volume this item would very easily reach \$5000 a year.

RUBBER FACTORY APPLIANCES.

A NEW SPREADER AND DOUBLER.

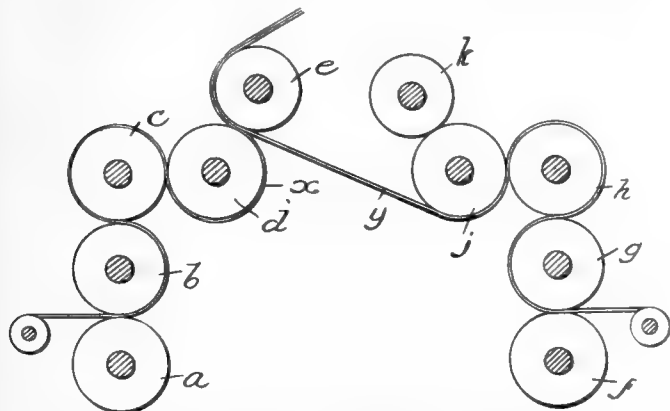
THE spreader and doubler shown in the accompanying cut is simple, inexpensive, and does the work excellently. Its method of operation is as follows: The cloth to be spread is put on the small rolls at either end of the machine. That coming from the roll at the front end passes up and under the spreading knife, where the solutioned rubber is applied, after which it meets the cloth from the roll at the back of the machine. The two fabrics with the rubber between them then pass through the compression rollers, where they are firmly united.



From this point the cloth passes over the large drum at the back of the machine to the wind up roll directly under the compression rolls. The "wind up" is driven by a chain and sprocket, and is fitted with a friction, as are the two cloth carrying rolls, to allow of an adjustment of the tension. The thickness of the coating can easily be gaged by adjusting the knife by means of side screws. The weight of the machine complete is 1950 pounds. [The New England Butt Co., Providence, Rhode Island.]

A TEN ROLL CALENDER.

MR ARTHUR N. HOOD, of the Hood Rubber Co. (Boston), is the inventor of a new system of working rubber that appears to be perfectly practical and very simple. Compounded rubber has long been sheeted by a building up process—that is, by running a thin sheet and then calendering one or more sheets upon it. This ensures a denser sheet and allows the manufacturer to use for example one type of stock as a base, another as



a filler, and a third for a cover. These sheets as a rule are put through the same rolls again and again, until the desired thick-

ness is attained. Mr. Hood's device, however, has a multiplicity of rolls and does the whole business at once, besides embossing the upper surface. To accomplish this result he has what are practically two small five roll calenders with the rolls so arranged that any part is easily accessible. Of the ten rolls shown, that marked *d* is engraved, while all the rest are plain. If, therefore, a cheap basic stock is sheeted on the right hand calender, and meets a better grade, covering stock, coming from the left hand machine, the two would be united by the roll *e* and embossed by the roll *d*. The machine is so built that the rolls are interchangeable and if desirable it can be reversed, rendering it extremely convenient for manipulation. It is covered by United States patent No. 752,975—February 23, 1904.

COVERING FLEXIBLE CONDUITS WITH RUBBER.

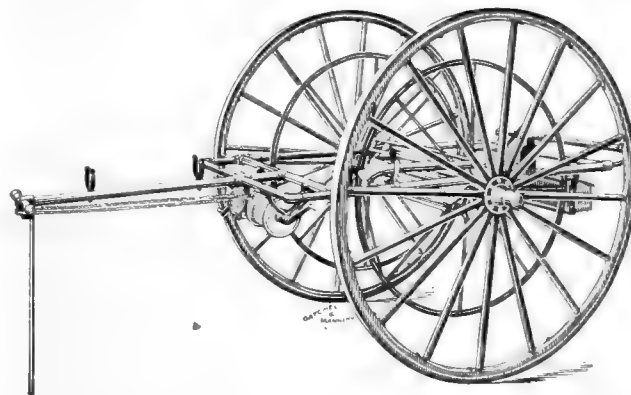
THIS is the invention of a practical rubber man and consists of an apparatus for coating, drying, and cleaning flexible conduits. The conduit in the application of this principle is passed first through a coating pan, partially filled with rubber cement, on one side of which is a spreading device. From here it goes to the drying device, which consists of a table and steam coil encased in perforated sheet metal, the conduit being supported



and carried by an endless belt. After drying it goes through the cleaning apparatus, which consists of a vessel set on standards, provided with guide rollers, and a pair of brush rollers. As will be seen, the machine is very simple and the work can be done quickly and effectively. The spreading device is so made that a variety of thicknesses can be applied to the surface of the conduit. The inventor is John T. Dickey, of Barberton, Ohio, to whom has been granted United States patent No. 701,472.

A NEW VILLAGE HOSE CART.

THE illustration below relates to a new line of wood wheeled hose carts for village use. The frame, reel, and tongue are formed of tubular steel, making a strong and durable cart of medium weight, and one that will stand rough usage. They



are equipped with fireman's axe and rack, crowbar and holder, automatic brake on reel, tool box, friction roller, pipe holders, tongue rest, and rope reel and drag rope; polished brass hub caps, and handsomely painted and striped. Roller bearings and also arch and bell, if desired. The capacity of the type of cart here pictured is 400 or 500 feet of 2½ inch rubber hose, according to size; height of wheels 4½ to 5 feet; weight, 350 and 450 pounds. Rubber tires, if desired. [Wirt & Knox Manufacturing Co., No. 22 North Fourth street, Philadelphia.]

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

THE article on this topic in the March issue of THE INDIA RUBBER WORLD is interesting, and no doubt there are many who would like to see it supplemented by an account of foreign rubber imports into England. It appears that the Americans are now making themselves several lines of goods, at one time imported. Except, perhaps, vulcanite and toys, Great Britain claims to be able to produce all rubber goods that are in demand, and of a superior quality to what is imported, but of course there is the fiscal question, which undoubtedly reacts against the manufacturers' interests. Some speculation has been rife as to the particular goods which were imported so largely from the Continent last year as to call for special notice at the hands of the chairman of the Silvertown company meeting. The goods were not specified, though no doubt many in the trade could indicate them or enlighten my ignorance on the matter. Against this instance of successful invasion, however, there are certainly other cases where the attempt to oust home made goods from the market has resulted in dismal failure. I don't know who would undertake to write the article I have suggested. Interviewing on trade topics is by no means so easy or so productive on this side as it appears to be in America, though with the general disinclination to give information there is an equally strong inclination on the part of individuals to hear what their fellows have to say.

AT 47, Farringdon street, London, is situated the European headquarters of the great American combination of rubber footwear manufacturers. It cannot be said that this company competes to any great extent with British manufacturers, because with the exception of perhaps three firms the class of goods of which the bulk of the American imports consists are not made in this country. Besides boots and shoes of all descriptions, the United States Rubber Co. are now doing a large business in motoring garments, there being an increasing demand for the heavy macintosh type. With regard to the boots made by the company I may mention the increasing appreciation among officers of the army of the "Squadron" military boot. These boots, generally known in the service as "gum boots," do not form part of the regulation outfit, but are used in undress for many purposes where the leather boot is not compulsory and under conditions where it would be likely to get spoilt, or at any rate, very dirty. "We look upon gum boots," said a staff officer at one of our great military stations to me in response to a query on the subject, "much as the ordinary man looks upon carpet slippers—as a great convenience, but not intended for show purposes." Another direction in which I think such boots might find a wider application is in metal mining, in the case of those who have to pay official visits at intervals. Of course such boots would require more careful treatment than hob nailed leather, but at any rate they would be watertight, which is a desideratum.

THE annual meeting of this society is to take place this year in New York next September, and an attractive program, including visits to the St. Louis exhibition, Niagara, Pittsburgh, and other places has been arranged. The New York section of the society is one of the latest, but it has made a name for itself, and from all accounts the members seem determined to make the meet-

ing a success. It cannot be said that the rubber trade is very strongly represented in the society, as regards its British sections. I don't know how far this holds with respect to the New York section, but the Canadian section at any rate has in Mr. Harold von der Linde, of the Gutta Percha and Rubber Manufacturing Co. of Toronto, a prominent representative of the trade both on its scientific and commercial side. Times not being too good at present in many British industrial circles, it is a matter of serious consideration for a good many members whether they can afford the time and expense to make the trip. I do not imagine that the number of travelers will be very large, these long distance affairs appealing to the affluent, and independent members rather than to the larger number who cannot well be placed in this category. In the list of abstractors of scientific publications for the *Journal* of the society the name of Mr. J. K. Burbridge is to be seen. In Mr. Burbridge, who is departmental manager and chemist at the rubber works of Messrs. William Warne & Co. (London), the publication committee must be congratulated on the assistants they have obtained and one cannot help feeling that Mr. Burbridge with his wide practical knowledge must often feel inclined to add some caustic remarks of his own when dealing with the regular crop of patent substitutes for rubber. The president of the society this year is Professor Sir William Ramsay, K. C. B., F. R. S., who is at present engaged in a chemical investigation into the constitution of Gutta-percha—a body to which he seems first to have given serious attention when appointed as advisory expert to the Gutta Percha Corporation, Limited, formed in London some years ago, and of somewhat unfortunate memory.

DESPITE the jubilant tone in the remarks of the chairman, Sir Charles Evan-Smith, at the meeting of the Marconi Co. in London, as to the conclusion of negotiations with the general postoffice, there did not seem anything in the speech to cause quakings in the hearts of the cable companies. The over sea business has apparently still serious difficulties to overcome, and it is evident that the panic among cable company shareholders some little time back was decidedly premature. That last year was an exceedingly wet one needs no emphasis, and the mining companies in Cornwall have had serious difficulties with the inflow of water. Personally, I should hesitate before indicting the Marconi telegraph as being a prime cause of the bad weather, but it has been assailed in wordy warfare at mine meetings and to judge by some of the utterances a practical assault on the telegraph station would appear to be not improbable.

WITH the reopening of the premises recently occupied by Messrs. Wallington, Weston & Co. at Limpley Stoke, by a new company known as the Limpley Stoke Rubber Co., the number of rubber firms in that agricultural portion of England has been increased to four, the others being The Avon Rubber Co., of Melksham; Messrs. Spencer, Moulton & Co., of Bradford-on-Avon, and Messrs. Wallington & Weston, who are now located at Frome. As the latter firm was an offshoot, so to speak, of the Avon, so the Limpley Stoke Co. in its personnel was at one time closely identified with those who lately occupied its premises. With the recent addition to the works, the Avon Rubber Co. has now quite an imposing appearance, and a corresponding increase in business;

AMERICAN
IMPORTS
OF RUBBER
GOODS.UNITED STATES
RUBBER CO.THE
MARCONI
COMPANY.SOCIETY OF
CHEMICAL
INDUSTRY.

indeed all the firms in that quarter speak as if they had nothing to grumble at in the way of trade.

THE recently published will of Mr. George Ash, of Claudius, Ash & Sons, Limited, manufacturers of dentists' materials, indicates that this branch of business is a profitable one; £300,000 odd is a substantial sum to leave, though of course it has not all been made out of the goods with which we are concerned in this Journal. Still from what I know of the prices charged for dental rubbers of various kinds, and the grumbles of individual dentists on the point, it is clear that the business has not been carried on at cut prices. Some few years ago the dissatisfaction of the dental profession—not, be it understood, at the quality, but merely at the price of Messrs. Ash's goods—led to the formation of a new company, in which many dentists of repute are shareholders. This company is called the Dental Manufacturing Co., Limited, and has a capital somewhere in the neighborhood of £100,000, paying its shareholders substantial dividends. It is perhaps worthy of mention that it is in dentistry for the million, as carried on particularly by the exponents of American practice, that the bulk of the compound vulcanizing rubber is used. Such material is not used to any great extent by those whose patients belong principally to the wealthy classes, its place being taken largely by gold plate. With regard to Gutta-percha, I do not find that the artificial product, New Gutta, has been brought particularly before the dental profession; probably the amount of prospective business is not such as to warrant the expenditure which would be entailed, though if it is true, as I am credibly informed, that some dental rubber is retailed at £2 per pound, the profits on Gutta-percha may be such as to excite interest and cupidity.

It is not surprising that the rapidly approaching end of the Dunlop monopoly is heralded with a good deal of speculation as to the course of events after October next. That competition will become keener goes without saying; in the meantime it is interesting to note that the Dunlop company have some interesting novelties in preparation. I understand from a source which is trustworthy, albeit not official, that great things are expected from the chain fabric tire, samples of which have survived severe road tests in a most satisfactory manner. This fabric, I may say, is the invention of Mr. Midgley, of Birmingham, a coworker with Mr. S. F. Edge, of motoring fame. The patent rights are now the property of the Dunlop company, who have been engaged in their exploitation for some time, though the material is not yet on the market. Briefly described, the iron chain fabric, which is specially manufactured in Birmingham, has a rubber surface applied to both sides. It is then subjected to a high degree of pressure and vulcanized under pressure in molds to form a homogenous body. The customary use of canvas is here, it will be seen, dispensed with. I understand this fabric is specially intended for motor rather than cycle tires.

IT is announced that a receiving order in bankruptcy has been made against Mr. Henry Cresswell, of Woodley Bank, Hyde, near Manchester, and the fact will come as a surprise to many who watched the building of his fine residence in the neighborhood of the erstwhile Hyde Imperial Rubber Co., where his fortune was made, and subsequently lost. It would of course be out of place at this juncture to refer to strictly business matters, but one may make the general remark that Mr. Cresswell was one of those who profited largely in the early days of the tire industry but who subsequently got stranded in the shoals and quicksands of its competitive days. After closing his connection with the firm above mentioned, Mr. Cresswell founded the

North Cheshire Rubber Co., a concern which seems to have found itself in difficulties almost from its birth.

AT the sale by tender on April 20 the Gutta-percha amounted to 50 tons and the rubber insulated wire to 4 tons. There were also 10 cwt. of ebonite shavings and dust. The amount of Gutta-percha is rather above the average of recent half yearly sales, a fact which shows that the extended use of the dry core or paper insulated telephone wires has not had the effect of ousting Gutta-percha insulation.

AT the moment I am not in a position to give any details of the new rainproofing process which was referred to at the recent annual meeting of J. Mandleberg & Co., Limited. The fact, however, that the firm's energies are being exerted in this direction is important as indicating the direction of popular demand and can hardly, therefore, prove comforting to those who predicted a great revival of the rubber proofing trade.

THE result of the libel action brought by Captain de Keyser against Captain Guy Burrows, author of a volume bearing the subjoined title, will hardly prove welcome to those who have joined in the protest against the alleged Belgian cruelty and rapacity in the Congo Free State. The fact, however, that Captain de Keyser recovered substantial damages does not at all show that the charges generally are untrue. In this case a mistake seems to have been made and the author has to bear the penalty. It is hardly possible that wholesale defamation of the character of the Belgian authorities and traders can have been indulged in, and I have not seen any indications in the press that the just demands of the powers for an enquiry will be abandoned, though of course the London action will not be minimized in Brussels. It has to be borne in mind, moreover, that Captain Burrows was without the assistance of a most material witness whose presence might have materially altered the aspect of affairs. Lectures on the subject, I may say, are now being given in English provincial towns and if all that has been and is being said is untrue the prospects of the lawyers in view of libel actions must be considered extremely bright.

THE INDUSTRY IN AUSTRIA-HUNGARY.

THE Vienna *Gummi-, Gutta-percha-, Asbest- und Celluloid-Zeitung* says: "The efforts made of late to place this industry in a healthy condition, which is very much needed, seem to have had but little success. While the number of establishments employed in this industry is comparatively small, a material overproduction is the rule with most of them, and the few exceptions would have to be induced to make great sacrifices in order to lay the foundation for a healthy condition. The present condition of this industry, owing to the severe battle of competition, is a distressing one. The recent announcement of the liquidation of a stock company seems to be of little consequence; the retrogression of the whole industry and the hoped for improvement having been in vain, all the factories are insufficiently employed. Another unfavorable factor in this condition is the abnormal advance in prices of the raw material (the market prices of crude rubber having advanced within the past six months nearly 50 per cent. and more), and the factories are therefore compelled to sell at a loss, in order to keep employed. Even if the recent attempts to place the industry in a healthy condition give some hopes of a realization through the fact that a large banking institution has taken the initiative, much doubt of its success still prevails, owing to the difficulty of combining the varied interests."

THE
DENTAL RUBBER
BUSINESS.

CONDEMNED
POSTOFFICE
STORES.

NEW
RAINPROOFING
PROCESS.

"THE CURSE OF
CENTRAL AFRICA."

A NEW
TIRE
FABRIC.

MR. HENRY CRESSWELL.

THE REVOLVING HEEL IN ENGLAND.

THE type of heel known as the "revolving," although the number of revolutions per minute is so few that no speed indicator yet known will register them, has caught the British fancy, and for these reasons: In the first place, the rubber heel certainly outwears the leather; then the Briton always comes down solidly on his heels when walking, and the elastic cushion eases the jar; and still further, the fact that when the outer edge of the heel is worn one can turn that part toward the instep and present a fresh surface for wear, appeals to him mightily.

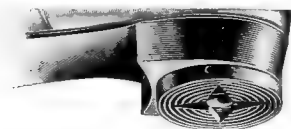


QUAT.



WOOD-MILNE.

That the heel as a revolver first appeared in the United States but did not sell well, is strongly urged. The American, however, is thrifless as compared with his cousin across the Atlantic. He won't bother to turn a heel; that is, as a community he won't. Nor does he like the looks of a money saving device on a fine pair of shoes. But the more independent Briton would wear copper-toed shoes if it suited him and never give their appearance a thought.



PALATINE.

Nor does he have the objection to rubber heels in general that some Americans feel, in that when they walk into an office unannounced, the rubber heel making no sound, they startle

the occupant by appearing at his elbow like a ghost or burglar, and thus embarrass themselves. The English office is so guarded that none enters except through the coöperation of the occupant.

And so the heel, the revolving heel, in many shapes, has caught on and is to be seen everywhere. The history of its growth is most interesting. It began back in 1896, when Mr. P. E. Roberts, of the Revolving Heel Co. (London), first put one on the market. He had his troubles in getting the right goods and in interesting the public, but finally success came.



HARBRO.



HUSHAPAD.



THE TRAMP.

His company to-day are said to be marketing over a million a month of them. The business of this one company is between \$400,000 and \$500,000 a year, so it is said, and there are others—many of them. For example there is Wood-Milne, the Palatine, the "Quyat," the "Hushapad," the Harboro, the Tramp, and many others. Bear in mind that the above refers only to revolving rubber heels, and that there are just as many of the kind that cannot be turned after wear.

As for those who wear them, they are to be seen on the shoes of peers of the realm and on costers, on the boots of elegantly dressed ladies and on the substantial footwear of the charwoman—all of which indicates real merit.

THE OBITUARY RECORD.

LOUIS E. K. ROBSON, who died at Malden, Massachusetts, March 27, aged 51 years, had been since 1876 chief clerk of the Edgeworth factory of the Boston Rubber Shoe Co. He was born in Stoneham, Mass., being a son of the Rev. John Robson, a retired clergyman, at one time a partner of Mr. E. S. Converse in operating the old "Red Mills" in the manufacture of dye stuffs. Louis Robson was a master of arts of Tufts College, and spent four years after graduation in teaching. He served at one time on the Melrose school board, was something of a writer, and was active in the literary organizations maintained in his community. In 1893 he served as alderman in Malden. He was unmarried. A surviving brother is John Robson, formerly with the Boston Rubber Shoe Co., and now general superintendent of the Woonsocket Rubber Co.

RUDOLPH FISCHER, vice president of the St. Paul Rubber Co. (St. Paul, Minnesota), died on April 8, at Pasadena, California, of an illness from which he had suffered for more than two years. He was 36 years old and a native of St. Paul, being a son of the late Louis Fischer, an early settler. The St. Paul Rubber Co. was established in 1877, as the first rubber jobbing house in the northwest, west of Milwaukee. Later the firm became incorporated, with Albert Fischer, a brother of the deceased, as president—a position which he still holds—and Rudolph Fischer, vice president. The house did a jobbing business in rubber goods generally. The deceased is survived by a widow and three children.

THE Hon. Oliver S. Kelly, who died at Springfield, Ohio, on April 11, aged 79 years, was the father of Edwin S. Kelly, some time general manager of the Consolidated Rubber Tire Co. Their name is represented in the designation of the "Kelly-Springfield" tires. The deceased was interested largely in the manufacture of agricultural implements and steel products, and was active in business until within a few days of his death.

RUBBER UNDER THE RUSSIAN TARIFF.

THE new Russian customs tariff, confirmed by the Emperor on January 13, 1903, has not gone into effect, and no date has been fixed for its operation. The British board of trade, however, has prepared a translation of it, based upon which THE INDIA RUBBER WORLD has made a calculation of the rates, in American money, per 100 pounds avoirdupois, as follows:

	New rate.	Old rate.
In sheets or threads, not combined with other materials..	\$11.41	\$ 9.41
Manufactures (rubber in combination with other materials).....	17.12	15.98
Hard rubber—unwrought.....	11.41	9.41
Hard rubber manufactures.....	55.38	15.98
Boots and shoes.....	30.55	30.55
Card clothing, with felt.....	8.56	8.56
Card clothing, without felt.....	17.12	17.12
Tissues containing rubber threads or rubber in other forms are dutiable according to the material of chief value.		

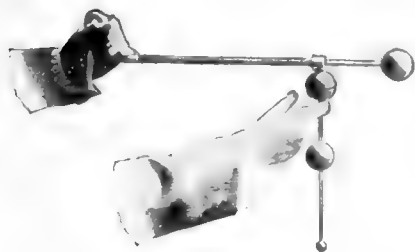
Crude India-rubber and Gutta-percha, including scrap, are now dutiable at about \$1.29 per 100 pounds; the new tariff provides for a rate of \$2.43.

The new tariff also provides for an export duty on "Caoutchouc, waste" of 1½ rubles per Russian poud, equal to about \$2.43 per 100 pounds, to which THE INDIA RUBBER WORLD, has referred already [March 1, 1903—page 208.]

NEW GOODS AND SPECIALTIES IN RUBBER.

THE SNYDER HEALTH VIBRATOR.

THE value of a system of exercise and massage as a curative agent is now very widely recognized, but the most approved methods to date have involved the necessity of employing an adept *masseur*, owing to the difficulty of manual application on one's self. By means of a device invented by Lambert Snyder, and on which patents are pending,



it is claimed that individual application is practicable, and that the results are of the highest efficiency, while the cost of the apparatus is slight. The device is called the Portable Exhilarator. It consists of

a steel horizontal rod, crooked at one end to provide a convenient means of grasping it in one hand, and a dependent movable rod, attached to the other by means of a socket. Steady pressure of the operator's free hand, causing the dependent rod to move back and forth along the horizontal one, produces a vibratory effect which is conveyed to the system of the operator. This may be regulated in force by the rate of speed in using the device—varying from the most delicate vibrations to such strong effects as will affect the most robust constitution. The applications of rubber in this device are: (1) A covering of rubber for the crook, by which the device is gripped by the operator; (2) a ball at the other end of the rod, which, in some treatments, as for headache, is applied to the portion of the body to be treated, while the crook rests against a table or other firm object; (3) two balls on the suspended rod, by varying the position of which the force of the vibrations is controlled; and (4) a covering for the suspended rod, between said balls, to render it more agreeable to the hand of the operator. The rubber employed is referred to as being of the best quality, adding to the durability of the device. [The Lambert Snyder Co., No. 10 West Twenty-second street, New York.]

A NEW DOUBLE TUBE BICYCLE TIRE.

THE cut herewith illustrates a new double tube tire, the features of which are an extra heavy cover and especially heavy



tread. This tire is made under a patent granted September 15, 1903 (No. 739,053), which, with the method employed for coating the inner side of the cover, is designed to prevent any chafing of the inner tube. The inner tube is constructed with the "Continental" end, also protected by the patents of the

same company. The tire as illustrated is designed for bicycle use, and is one of an extensive line of bicycle tires now being produced by the Continental Rubber Works, Erie, Pennsylvania.

A RUBBER AUTOMOBILE VEIL.

THE article of ladies' wear for automobiling, illustrated herewith, is gathered around the top on a ribbon, which is tied un-



der the brim of the hat and is then thrown over it. It is absolutely waterproof and dustproof. It folds in a case the size of a ladies' pocketbook and can be carried without any inconvenience. It looks like a silk chiffon veil, and is just as light. These veils are particularly adapted for automobiling, driving, and stormy weather. It will fit over a hat of any size and will not harm the trimming. The demand for these veils is constantly increasing, as the ladies realize their many advantages. [Hill Brothers, wholesale agents for New York, Nos. 707-709 Broadway.]

DR. CRILE'S PNEUMATIC PRESSURE SUIT.

DR. GEORGE CRILE, of Baltimore, has done some exceedingly brilliant work in the way of controlling blood pressure in

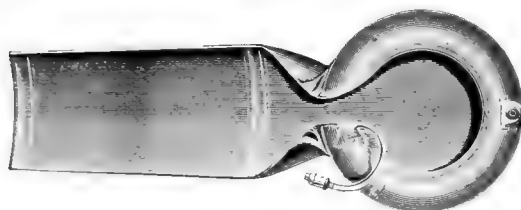


case of shock or collapse. A series of experiments on animals led this distinguished physician to doubt the efficacy of the stimulants in general use, and to come to the conclusion that failing blood pressure could be remedied by mechanical means alone. This resulted in the production of a rubber suit of great strength with which the patient to be treated was clothed and into which air could be pumped at pressures that were always under the control of the surgeon. The suit consists of a pair of trousers with feet, and a pair of sleeves with mittens. The suit is double lined with rubber both inside and out, and is both

strong and unstretchable. After the patient is placed in it and the sides laced up, the air pressure is applied between the two fabrics, an ordinary bicycle tire pump being used, until the proper pressure is reached. The suit has been found particularly useful in operations on the head and neck, particularly where the patient is forced to take a sitting posture. As in all important operations blood pressure is constantly and carefully noted, it is an exceedingly simple matter to regulate the pressure in the suit to fit the varying conditions that arise. After the operation the suit is often left on for some time, its deflation being accomplished as slowly as desired. [The B. F. Goodrich Co., Akron, Ohio.]

THREE "GLOVE COMPANY" NOVELTIES.

THE "Glove Company," as one of the best known rubber manufacturing concerns are familiarly known, have for years had a splendid reputation for excellence in manufacture. The great bulk of their goods, however, were fine footwear and equally fine clothing. But in the last few years, while still increasing notably in the lines mentioned, they have built up a very large business in general druggists' sundries, until to-day that department alone would be considered enough of a business for many rubber manu-



facturers. This business has been secured by the production of good goods and new and useful novelties. For example the Hygeia Reversible Surgical Pads are a novelty, and one that appeals strongly to the operating surgeon. The cushion part of the pad is pneumatic, and the whole can be reversed by a turn of the wrist. This reversible feature makes the pad far more cleanly, useful, and durable. The drainage apron is arranged by an ingenious insertion of a strip of ductile metal in the lower border, by which it is curved to fit the contour desired. These pads are made of the special maroon rubber for which the company have a reputation.— Two other novelties that the same house have lately put upon

the market are the "London" and the "Canteen" hotwater bottles. Both of these are made in maroon rubber. The "London," so called because its shape suggests the English type of bottle, has a round stiff handle, and is most convenient for filling and handling. The "Canteen" is a round bottle with the same kind of handle. [Goodyear's India Rubber Glove Manufacturing Co., New York.]

DARLINGTON DISHWASHER.

THE device illustrated herewith, which appears excellently adapted for its use, is composed wholly of rubber, with the ex-



ception of the bristles in the brush. The head of the brush is made of rubber, perforated to allow the water to flow freely among the bristles, besides which the tubing employed is of course rubber, together with the connection for the sink faucet. Its use is practicable wherever a force of water can be had, or a boiler is used. It is used practically without wetting the hands; it does not chip china or require a dish

cloth; it does away with dishpans and greasy water; it saves soap and hot water; it is adjustable to any faucet. [The Domestic Utilities Co., No. 54 West Twenty-second street, New York.]

THE "SUMMIT INVIGORATOR."

THIS is a new rubber bath brush, which is adapted also for massage and shampoo purposes. It is made with an opening for the thumb, as shown in the illustration, which prevents the brush from slipping off the hand, a source of complaint in regard to some other bath brushes. When the brush is to be used, the clasp is fastened, after which the brush is drawn on as if it were a glove; it is taken off the same way as a glove, without unfastening the clasp. It is designed to retail at 50 cents. [The Summit Rubber Co., Barberton, Ohio.]



RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED MARCH 8, 1904.

- N**O. 753,920. Vehicle tire [pneumatic, with spongy cork protector sections]. M. V. Rush, Anderson, Ind.
- 753,955. Hoof pad. G. H. Clark, Boston, assignor of one half to E. C. Wright.
- 753,968. Device for applying liquids to the scalp [comb with perforated teeth and a collapsible bulb]. A. J. Farmer, Detroit, Mich.
- 754,000. Reservoir pen or the like. A. Munro, Stockport, England.
- 754,015. Device for storing and administering serums. F. G. Ryan, assignor to Parke, Davis & Co., Detroit, Mich.
- 754,078. Method of vulcanizing tires in continuous lengths. G. A. Ludington, assignor to Firestone Tire and Rubber Co., Akron, Ohio.
- 754,129. Pyrographic apparatus. A. S. Dietz, New York city, assignor to F. Tolhurst.
- 754,148. Hollow India-rubber article used as a toy. F. Kuhlemann, Budapest, Hungary.
- 754,186. Pump valve [consisting of a disk of soft rubber and a double cone thimble of metal set therein]. Otto Arendt, Newark, N. J.
- 754,217. Portable bath or sack for washing or bathing purposes. A. Herz, Vienna, Austria.
- 754,234. Dress shield. C. A. Pienkowsky, assignor to Anthony Shield Co., both of Chicago.
- 754,244. Vehicle wheel [with solid rubber tire]. G. W. Sanford, assignor of one third to James Gray, both of Thomaston, Conn.
- 754,276. Syringe. E. Bartsch, San Francisco.
- 754,386. Hernia truss. C. P. Norris, Chambersburg, Pa., assignor of one third to G. L. Snider.

Trade Mark.

- 42,222. Rubber nipples. Davidson Rubber Co., Boston, Mass. *Essential feature.*—The word "Nearnature." Used since Jan., 1903.

ISSUED MARCH 15, 1904.

- 754,416. Fountain pen. W. Bovill, Chicago.
- 754,645. Pneumatic tire. J. Dupont, West Derry, N. H.
- 754,648. Tire [pneumatic detachable, with square tread]. H. G. Fiske, assignor by mesne assignments, to Morton Trust Co., both of New York.
- 754,877. Dress Shield. J. H. Lee and N. B. Conkling, St. Louis.
- 754,947. Adjustable heel for shoes. A. Westwood, Oakland, Cal., assignor of one-half to I. Fiel.

ISSUED MARCH 22, 1904.

- 754,959. Covered elastic band. J. Ashworth and F. N. Ashworth, Somerville, Mass.
- 754,992. Exercising apparatus. C. A. Grabnerm, Warsaw, Ind.
- 754,988. Combined moistening and sealing device or the like [with rubber bulb]. L. Fritz and W. W. Dryden, assignor of one third to G. Schmidheiser, Philadelphia.
- 755,147. Vehicle tire [pneumatic detachable]. P. W. Litchfield, Akron, Ohio.
- 755,180. Wall packer for oil wells. H. Smith and W. Wright, Franklin, Pa.
- 755,259. Cushion tire. J. H. Toole, Chicago.
- 755,275. Bottle closure. F. W. H. Clay, Pittsburgh.
- 755,310. Protector for pneumatic tires. L. Nioré, Château-Renault, France.
- 755,325. Hose coupling. G. Soutar, East Pittsburgh, Pa.

ISSUED MARCH 29, 1904.

- 755,701. Hose nozzle. G. A. Anderson, Kansas City, Kas.
- 755,711. Tire for vehicle wheels [cushion]. W. H. Sewell, Belfast, Ireland.
- 755,712. Tire for vehicle wheels [cushion]. W. H. Sewell, Belfast, Ireland.
- 755,747. Bath tub. H. P. Coile, Knoxville, Tenn.
- 755,779. Elastic tread horseshoe. H. E. Irwin, Galesburg, Ill.
- 755,901. Beerwort distributor. R. Mally, Vienna, Austria.
- 755,984. Toy. I. D. Worcester, Pittsburgh.
- 755,995. Hose nozzle holder. C. F. Brown, Chattanooga, Tenn.
- 756,021. Storm shield for vehicles. M. R. Hull, assignor to Rex Buggy Co., both of Connersville, Ind.

- 756,076. Fountain pen filling device. H. Taylor, St. Paul, Minn.
- 756,103. Fountain brush. H. A. Doten, Burlington, Vt.
- 756,140. Hose lining. W. E. Reid and W. H. Lau, Detroit, Mich.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1904.

[* Denotes Applications from the United States.]

- 3,402. D. Taylor, Brechin-Forfar, Scotland. Waterproof collar. Feb. 11.
- 3,417. A. Pretasch, London. Motor and cycle tires. Feb. 11.
- * 3,458. Addressograph, Limited, London. Rubber type (The Addressograph Co., United States). Feb. 11.
- 3,498. P. M. Matthew and C. R. Crombie, Edinburgh. Manufacture of golf balls. Feb. 12.
- 3,501. T. Ford and T. Hill, Stoke-on-Trent. Means of securing detachable tires on wheels. Feb. 12.
- 3,505. L. Crosland and W. Crosland, Limited, Bredbury, Cheshire. Machinery for cutting or slitting rubber. Feb. 12.
- 3,506. W. Bolles and J. L. Chase, Glasgow. Fountain pen. Feb. 12.
- 3,536. J. Rushworth, London. Cycle and vehicle tire. Feb. 12.
- 3,552. A. T. Collier, London. Elastic tire. Feb. 12.
- 3,600. J. J. Breuillard, London. Elastic heel piece for boot. Feb. 12.
- 3,670. The Hon. B. L. J. Tollemache, London. Means of inflating tires. Feb. 13.
- 3,671. *Same.* Improvement in tires. Feb. 13.
- 3,693. W. Bentley, Liverpool. Securing rubber tires to wheels. Feb. 13.
- 3,707. T. H. Slack, Alderley Edge. Revolving bootheel. Feb. 15.
- 3,842. T. W. Matthew, Edinburgh. Manufacture of revolving heel pads. Feb. 16.
- 3,907. S. G. Wimpffen, London. Protective device for pneumatic tires. Feb. 16.
- 3,946. T. J. F. Ryland, London. Plate for holding rubber on bootheels. Feb. 17.
- 4,006. W. Nalkowsky and A. Fels, London. Movable heels for boots. Feb. 17.
- 4,017. J. R. Skinner, Liverpool. Cushion heel for boots. Feb. 17.
- 4,026. W. F. Williams, London. Elastic tire. Feb. 17.
- 4,039. G. Moore, Jr., Birmingham. Bicycle tire. Feb. 18.
- 4,132. E. Lee, London. Improvement in tires. Feb. 18.
- 4,197. A. V. Page. Animal douche. Feb. 19.
- 4,202. T. H. Read and F. Read, London. Tire remover for motor cars. Feb. 19.
- 4,203. *Same.* Tire remover for bicycles. Feb. 19.
- 4,223. V. Jetley, London. Tire for vehicles. Feb. 19.
- 4,354. L. Dewanne, London. Pneumatic shoe or boot. Feb. 22.
- 4,412. W. P. Thompson, London. Hose coupling. Feb. 22.
- 4,440. W. L. Jackson, Glasgow. Method and means of securing rubber tires to rims. Feb. 23.
- 4,456. J. D. Roots, London. Pneumatic tire. Feb. 23.
- 4,547. Jane Eddie, Accrington. Elastic wristlet for infants. Feb. 24.
- 4,605. L. A. Dussek, London. Manufacture of golf balls. Feb. 24.
- 4,616. F. Rich, Crawley, Sussex. Inner tube for tires. Feb. 25.
- 4,623. A. Van der Stichlen, Manchester. Flexible tires for vehicles. Feb. 25.
- 4,639. G. A. Strutt, Derby. Tire and wheel for motors. Feb. 25.
- 4,680. L. Azulay, London. Pneumatic tire. Feb. 25.
- 4,744. A. G. Rosser, London. Non-skidding device for tires. Feb. 26.
- 4,806. T. Brown, J. Brown, and C. Smith, Sheffield. Revolving heel pad. Feb. 27.
- 4,899. W. L. Webster and C. J. Rhoades, London. Heel pad. Feb. 27.
- 4,911. A. Munro, Wrexham. Reservoir pen. Feb. 29.
- 4,921. T. D. Norgate, Southsea. Rubber heel and sole. Feb. 29.
- 4,960. R. Appleyard, London. Golf ball. Feb. 29.
- 4,972. A. E. Duquesne and L. L. Dockes, London. Toy comprising a plurality of dilatable chambers. Feb. 29.
- 5,014. M. Miller and J. A. Bunnell, London. Armor for pneumatic tires. Feb. 29.
- 5,063. T. T. Spencer, London. Heel protector for boots. Mar. 1.
- 5,196. W. M. Maynard, London. Golf ball. Mar. 2.

- 5,345. J. Hardie and F. H. Cooper, London. Protected device for pneumatic tires. Mar. 4.
 5,416. W. Rowbotham and W. A. Tamp, Birmingham. Rubber tire. Mar. 5.
 5,425. I. Frankenburg & Sons, Limited, and I. Frankenburg, Manchester. Heel pad. Mar. 5.
 5,433. J. Thornhill, Pemberton. Prevention of loss of air from pneumatic tires. Mar. 5.
 5,483. J. S. Smith, London. Pneumatic tire. Mar. 5.
 5,615. F. Schmidt and C. Sharp, Southampton. Air tube protector for pneumatic tires. Mar. 8.
 5,686. F. H. Richardson, London. Anti-puncturing device for tires. Mar. 8.
 5,764. E. Ayres, London. Boot protector. Mar. 9.
 5,822. J. H. Barry and W. J. Hunter, London. Detachable rim for pneumatic and other rubber tires. Mar. 9.
 5,827. N. Korth, London. Manufacture of tire covers. Mar. 9.
 5,830. E. C. F. Otto, London. Resilient wheel. Mar. 9.
 5,833. Bewley & Draper, Limited, and H. C. Draper, London. Combined ink reservoir and fountain pen filler. Mar. 9.
 5,858. T. Dowler, Manchester. Inflatable rubber toy. Mar. 10.
 5,891. A. H. Edwards, London. Means for automatically inflating pneumatic tires. Mar. 10.
 5,954. T. Hacking, Manchester. Water bottle. Mar. 11.
 5,973. J. Ferrier, Northampton. Means of attaching rotary boot heel. Mar. 11.
 6,047. E. Deitz and J. Quesnel, London. Pneumatic tire. Mar. 11.
 6,082. J. Birtwistle, Manchester. Pneumatic tire. Mar. 12.
 6,085. F. L. Bennett, Manchester. Pneumatic tire. Mar. 12.
 6,172. W. H. Southon and H. Southon, London. Golf ball. Mar. 14.
 6,194. Evelyn de la Rue, London. Fountain pen. Mar. 14.
 6,224. G. Dumond, London. Non-slipping device for pneumatic tires. Mar. 14.
 6,246. F. Shaw, Durham. Non-skidding device for pneumatic tires. Mar. 15.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 2, 1904.]

- 23,330 (1902). Heel and sole protector. T. F. and H. Atkinson, Birmingham.
 23,433 (1902). Boot heel and sole. B. Nelson, Durham.
 *23,571 (1902). Dress shield. G. Harrison, London. (G. M. Grant and others, Chicago, United States.)
 *23,637 (1902). Pneumatic tire. G. H. Clark, Boston, Massachusetts.
 23,671 (1902). Pneumatic tire. H. Parsons, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 9, 1904.]

- 23,707 (1902). Pneumatic tire. N. Wood, Manchester.
 23,806 (1902). Stuffing box packing [asbestos and rubber]. A. C. Roberts, Leeds.
 *24,097 (1902). Ventilated boot heel. J. Kennady, Boston, Massachusetts.
 24,231 (1902). Solid rubber tire. H. Falconnet, Choisy-le-Roy (Seine), France.
 24,232 (1902). Golf ball [rubber cored]. T. C. Crawford, London.
 24,243 (1902). Hot air and vapor bath. J. Valcke, Courtrai, Belgium.
 24,267 (1902). Heel protector. B. L. Freeman, Newcastle-upon-Tyne.
 24,314 (1902). Heel and sole protector. E. B. Tyler, Glasgow.
 24,327 (1902). Hoof pad. J. S. Campbell, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 16, 1904.]

- 24,460 (1902). Portable bath. A. Herz, Vienna, Austria.
 24,494 (1902). Pneumatic tire. C. Challiner, Manchester.
 24,534 (1902). Golf ball. W. Wood, Mitcham, Surrey.
 24,573 (1902). Waterproof cloth. E. Frankenberg, Hanover, Germany.
 24,574 (1902). Machine for waterproofing fabrics. Same.
 24,612 (1902). Respirator [for use by firemen]. M. Longden, Dawson, Canada.
 24,621 (1902). Surgical truss. C. A. Deltret-Claverte, Paris.
 24,739 (1902). Solid rubber tire. H. Falconnet, Choisy-le-Roy (Seine), France.
 *24,758 (1902). Solid rubber tire. G. B. Dryden, Chicago, Illinois.
 24,847 (1902). Vulcanizing apparatus. F. Knoeferl, London.
 24,918 (1902). Horseshoe pad. R. and R. H. Burgess, Hyde, Cheshire.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 23, 1904.]

- 25,044 (1902). Utilization of waste rubber. A. Theilgaard, Copenhagen, Denmark.
 25,067 (1902). Stethoscope. W. J. Penfold, Newcastle-upon-Tyne.
 25,186 (1902). Solid tire. M. Montgomery, Ballymena, County Antrim.
 25,304 (1902). Puncture proof fabric for pneumatic tires. W. C. Peters and W. Bellamy, Ely, Cambridgeshire.
 25,374 (1902). Non-slipping pneumatic tire. W. D. Sainsbury, Dublin.
 25,472 (1902). Pneumatic tire. S. T. Richardson and R. Price, Birmingham.
 25,485 (1902). Pneumatic tire cover of rubber and asbestos. G. Boardman, Gosforth.
 25,510 (1902). Fountain pen. J. A. O. Cole, Lagos, West Africa.
 25,573 (1902). Screw stopper for hot water bottles. A. J. Purser, Birmingham.
 25,655 (1902). Heel pad of leather and rubber. L. Eckhard, Bad-Homburg, Germany.
 25,673 (1902). Vaporizer for anesthetics. J. Lobjois, London.
 25,730 (1902). Pneumatic tire. A. LePlay, Paris.
 25,765 (1902). Heel protector. H. A. Wallace, Southwick, and J. Smith, Brighton.
 25,781 (1902). Hand Stamp. A. C. Kley, Liverpool.
 25,810 (1902). Solid tire. A. Hopton, London.

GERMAN EMPIRE.

PATENTS GRANTED.

- 150,417 (Class 39a). Protective casings for use in cold vulcanizing technical rubber goods. E. Frankenberg, Hannover. Feb. 24.
 150,787 (Cl. 63e). Elastic tires. E. Ohm, Duluth. Mar. 9.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 217,411 (Class 63e). Rubber tire filled with small hollow balls. F. Müller, Sorau. Feb. 24.
 217,736 (Cl. 63e). Serrated rubber protecting tread for tires. Asbest u. Gummiwerke, Alfred Calmon, A.-G., Hamburg. Feb. 24.
 217,608 (Cl. 69). Adjustable hard rubber safety comb for razors. A. Müller, Merscheid-Solingen. Feb. 24.
 218,123 (Cl. 30d). Hollow ball with mouthpiece for inflating it. Dr. J. H. Lubinus, Kiel. Mar. 2.
 217,961 (Cl. 33b). Appliance for retaining handkerchiefs and gloves in the pocket, being a rubber retainer provided with a slit-like opening. A. Schocher, Leipsig. Mar. 2.
 218,645 (Cl. 63e). Elastic tire. A. Burck, Darmstadt. Mar. 9.
 218,737 (Cl. 63e). Repair patches for tire punctures. L. Peter, Frankfurt a/M. Mar. 9.
 218,256 (Cl. 64b). Hard rubber saucer for beer glasses, with soft rubber ring underneath to deaden the noise on the table. W. Tautenhahn, Eibenstock. Mar. 9.

APPLICATIONS.

- 20,521. Nipple for nursing bottle. W. F. Ware, Philadelphia, United States. Mar. 9.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATES OF APPLICATION).

- 336,777 (Nov. 18, 1903). Richardson and Price. Pneumatic tire.
 336,799 (Nov. 19, 1903). Bondis. Non slipping pneumatic tire.
 336,704 (Oct. 27, 1903). Ernoul Taffin. Reinforced rubber.
 336,787 (Nov. 19, 1903). Deitz and Quesnel. Anti slipping motor tire.
 336,839 (Oct. 29, 1903). Grosselin. Juxtaposed wheel tires for motors.
 337,018 (Nov. 26, 1903). E. H. Seddon. Pneumatic tire.
 337,026 (Nov. 26, 1903). De Saint-Seine and de Montureux. Anti slipping rubber tire.
 337,051 (Nov. 28, 1903). Aldrich and Ryan. Device and process for the extraction of India-rubber without solvents.
 337,299 (Oct. 20, 1903). Société anonyme La Locomotion Moderne. Waterproof and airproof tubular tire.
 337,300 (Oct. 20, 1903). Société anonyme La Locomotion Moderne. Detachable protective felloe for pneumatics.
 337,323 (Nov. 4, 1903). Lebeau, Archambault and Comte. Elastic tire.
 337,295 (Aug. 25, 1903). Cummings. Pneumatic automobile tire.
 337,386 (Nov. 24, 1903). Schurr. Pneumatic tire.

[NOTE.—Printed copies of specifications of French patents may be ordered from R. Bobet, consulting engineer, 16, avenue de Villiers, Paris, at 50 cents each, post-paid.]

RUBBER GOODS MANUFACTURING CO.

THE fifth annual meeting of the shareholders of the Rubber Goods Manufacturing Co., incorporated under the laws of New Jersey, was held on April 14, at the registered offices of the company in that state, in Jersey City. The annual report of the president, Charles H. Dale, presented in printed form and read at the meeting, follows in full:

"In connection with the statement of the auditors for the year ending March 31, 1904, I wish to draw attention to the fact that while business was good during the first half of the year 1903, the general depression in trade throughout the entire country commencing in August, 1903, has been keenly felt by the rubber industry. Notwithstanding this, the sales for the year show an increase over preceding years.

"In considering the percentage of profit, it must be borne in mind that although the percentage is slightly lower than last year, this is in face of the enormous increase in the cost of crude material—notably rubber and cotton.

"The closest attention has been paid to the maintenance of the plants, the sum of \$209,644.73 having been expended during the past year for this purpose as against \$149,576.65 for the previous year; so that it is fair to say that all the properties are to-day practically as good as new.

"Finally, where an appraisal of quantities and values has been necessary, as in stock on hand and accounts and bills receivable, it has been made on a most conservative basis; and I can personally guarantee that the appraisals, both as to quantities and value, are in every instance under, rather than over true values."

The customary annual business reports were presented, accompanied by a certificate by the company's auditors, Messrs. Bragg & Marin, certified public accountants, and the whole approved.

THE NEW DIRECTORATE.

THE annual election for directors resulted in the choice of the following, the first nine named being reelected:

CHARLES H. DALE, No. 16 Murray street, New York.
 ERNEST HOPKINSON, No. 253 Broadway, New York.
 TALBOT J. TAYLOR, No. 30 Broad street, New York.
 HARRY KEENE, No. 253 Broadway, New York.
 CHARLES A. HUNTER, New Durham, New Jersey.
 FRANK W. EDDY, Detroit, Michigan.
 EDWARD LAUTERBACH, No. 22 William street, New York.
 ARTHUR L. KELLEY, Providence, Rhode Island.
 WILLIAM T. COLE, No. 68 Murray street, New York.
 HOWARD O. SMITH, president Indianapolis Rubber Co., Indianapolis, Indiana.

BALANCE SHEET.

[In the report as presented, all statements referred only to the last business year. But for convenience of comparison, the corresponding figures for the three previous years are here included, as shown in the respective annual reports. For earlier figures, reference is made to THE INDIA RUBBER WORLD of May 1, 1903—page 274.]

	ASSETS.			
	Mar. 31, 1904.	Mar. 31, 1903.	Dec. 31, 1901.	Feb. 1, 1901.
Cash.....	\$305,848.98	\$ 56,619.36	\$ 74,323.07	\$425,746.12
Mortgage notes (for property sold).....	31,000.00	31,000.00	15,000.00	.....
Accounts receivable ..	3,920.68	205,537.13	876,856.83	45,585.19
Treasury stock at cost.....	.....	.....	292,443.00	.....
Plants owned .....	.....	120,000.00	} 110,856.05	.....
Office furniture and fixtures owned.....	3,547.08	1,026.80		
Net earnings of properties less amount received to date.....	.....	.....	.....	1,271,783.77
Investments, Stocks of allied companies.	25,015,279.69	24,808,279.69	24,928,646.83	25,141,149.09
Total.....	\$25,359,596.43	\$25,222,462.98	\$26,298,125.78	\$26,884,264.47
	LIABILITIES.			
	Mar. 31, 1904.	Mar. 31, 1903.	Dec. 31, 1901.	Feb. 1, 1901.
Bills payable (for money borrowed)....	\$	\$	\$ 450,000.00	\$
Accounts payable, to allied companies..	.....	.....	597,326.42	.....
Accounts payable, to others.....	5,651.67	.....	53,657.44	.....
Deposits by companies.....	.....	.....	.....	405,317.33
Preferred stock.....	8,051,400.00	8,051,400.00	8,051,400.00	8,051,400.00
Common stock	16,941,700.00	16,941,700.00	16,941,700.00	16,941,700.00
Total.....	\$24,998,751.67	\$24,993,100.00	\$26,094,083.86	\$25,398,417.33
SURPLUS.....	\$360,844.76	\$229,362.98	\$204,041.92	\$1,485,847.14

CHARLES J. BUTLER, manager Morgan & Wright, Chicago, Illinois,
 WILLIAM SEWARD, JR., treasurer Hartford Rubber Works Co.,
 Hartford, Connecticut.

E. J. COUGHLIN, general factory manager, Mechanical Rubber Co.
 W. J. COURTNEY, railroad manager Peerless Rubber Manufacturing Co.

JOHN H. COBB, general manager the New York Belting and Packing Co., Limited.

The retiring directors were Middleton S. Burrill, Henry Steers (deceased), Henry R. Wilkening, James B. Taylor, Lewis D. Parker, and H. Carroll Winchester.

The new executive committee consists of Messrs. Dale, Hopkinson, Keene, Taylor, Hunter, Seward, and Coughlin.

At a meeting of the reorganized board the following were elected officers for one year:

President and Chairman Executive Committee—CHARLES H. DALE.
 Vice Presidents—ERNEST HOPKINSON, TALBOT J. TAYLOR, and CHARLES A. HUNTER.

Secretary and Treasurer—HARRY KEENE.
 Assistant Secretary and Treasurer—JAMES MCGUFFOG.

The company's sales for 1903 were reported at \$14,310,752. In preceding years they had been: \$13,999,329 in 1902; \$14,348,048 in 1901; \$13,364,090 in 1900.—The year's earnings amount to nearly 14 per cent. on the business of \$14,000,000.

INCOMES AND DISBURSEMENTS.

FOR YEAR ENDING MARCH 31, 1904.

Balance brought over from 1903.....	\$ 229,362.98
Income from dividends declared by allied companies for year.....	880,468.72
Interest account—excess of receipts over payments for year.....	5,584.04
Total.....	\$1,115,415.74
Expenses paid for year.....	\$103,701.60
Charged off, loss on properties, contracts, guarantees, and for depreciation.....	87,271.38
Total expenses, etc.....	190,972.98
Net income.....	\$924,442.76
Four dividends paid to March 31, 1904, preferred.....	563,598.00
Balance, surplus	\$360,844.76

EARNINGS OF CONSTITUENT COMPANIES FOR 1903 AND DISPOSITION.

Net unapplied earnings, as per previous report.....	\$ 492,208.48
Earnings of the companies for the year....	\$2,133,787.56
Charged off for maintenance and repair ...	209,644.73
Net profit for 1903.....	\$1,924,142.83
From the above there has been set aside for sinking fund :	
For bonds.....	\$ 56,477.65
For additions to plants ..	260,280.93
For depreciation.....	295,565.05
	612,323.63
Leaving a balance of.....	1,311,819.20
Making a total of.	\$1,804,027.68
Out of which dividends have been declared for the year ending March 31, 1904.....	938,860.72
Net unapplied earnings of allied companies.....	\$865,166.96
Less amount owned by stockholders other than the Rub- ber Goods Mfg. Co.....	47,612.64
Net unapplied earnings belonging to the Rubber Goods Mfg. Co.....	\$817,554.32
Of the above dividends.....	\$938,860.72
There was paid to stockholders other than the Rubber Goods Mfg. Co.....	58,392.00
Dividends paid to Rubber Goods Mfg. Co.....	\$880,468.72

The figures given in the preceding column are compared be-
low with the corresponding details in the former four annual
reports of the company :

RUBBER GOODS MANUFACTURING CO.

Income from dividends declared by constituent companies :

1899.....	\$ 644,624.83
1900.....	1,301,609.73
1901.....	1,362,824.00
1902 (to March 31, 1903).....	1,570,402.64
1903 (to March 31, 1904).....	880,468.72

Interest account :

1899—Excess of receipts.....	\$37,880.11
1900—Excess of receipts.....	25,561.80
1901—Excess of payments.....	22,556.81
1902 (15 mos.)—Excess of payments.....	47,482.77
1903—Excess of receipts.....	5,584.04

EARNINGS OF CONSTITUENT COMPANIES.

* Gross earnings, 1899.....	\$1,652,901.09
Do 1900.....	2,083,049.75
Do 1901.....	1,898,964.50
Do 1902.....	2,103,377.80
Do 1903.....	2,133,787.56
	\$9,872,080.70

Charged for depreciation of plants :

1899.....	\$ 25,842.85
1900.....	198,921.78
1901.....	201,910.78
1902.....	536,253.63
1903.....	295,565.05
	\$1,258,494.09

† Charged off for sinking fund :

1899.....	\$ 45,449.05
1900.....	50,737.99
1901.....	50,467.69
1902.....	50,209.24
1903.....	56,477.65
	253,341.92
	\$1,511,836.01

Net earnings for five years.....	\$8,360,244.69
From which has been appropriated for additions to plants	1,053,447.21

Leaving a balance of.....	\$7,306,797.48
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Out of which dividends have been declared :

1899.....	\$ 769,624.83
1900.....	1,434,693.73
1901.....	1,469,948.00
1902 (to March 31, 1903).....	1,678,723.64
1903 (to March 31, 1904).....	938,860.72
	6,291,850.92
	\$1,014,946.56

* After deducting cost of repairs and maintenance of plants. † For bonds of
New York Belting and Packing Co., Limited, and Mechanical Rubber Co.]

[The figures at the foot of the preceding column are subject to cer-
tain deductions under a variety of headings, including losses of allied
companies taken over at various times and charged to the Home office.
The result is to leave the net unapplied earnings at the end of the past
year as follows :]

Net unapplied earnings.....	\$865,166.96
Less amount owned by stockholders other than the Rubber Goods Mfg. Co.....	47,612.64
Net unapplied earnings belonging to the Rubber Goods Mfg. Co.....	\$817,554.32

THE TEXTILE GOODS MARKET.

THE gradual decline in the price of staple cotton has had a
tendency to maintain the sluggishness in the market for
fabrics. Consumers of cloth naturally looked for a correspond-
ing shading of prices for manufactured products, but the firm-
ness of the manufacturers and commission houses has prevent-
ed anything like large transactions during the month. Despite
the skill of experts in forecasting the new crop, nothing accu-
rate has been brought forth.

Spinners are not taking only such quantities as is necessary
to complete contracts in hand, and as there is curtailment going
on in all parts of the country, it is not likely that the price of
cotton will advance above the current figure before the new
crop materializes. Prices of cotton middling upland spots :

	New York.	New Orleans.	Liverpool.
April 6.....	15 cents.	15 cents.	8.50d.
April 13.....	14.40 cents.	14 ⁹ / ₁₆ cents.	8.24d.
April 20.....	14.10 cents.	14 ⁷ / ₁₆ cents.	7.92d.
April 27.....	13 ³ / ₄ cents.	13 ³ / ₈ cents.	7.58d.

The cotton duck situation has not changed appreciably since
last writing. Most mills are working on short time, (1) to
make their stocks of staple carry them through to the end of
the season, and (2) on account of their ability to meet the pass-
ing demand by so doing. Some bitter comment has been in-
dulged in on the part of rubber manufacturers, on account of
the unsatisfactory way goods are being delivered, but upon in-
vestigation it has resulted in placing the fault upon the trans-
portation companies. Canadian manufacturers, whose goods
were shipped nearly three months ago, are still handicapped
because of their non-arrival. Requisitions have been com-
ing to the mills for goods that are due the rubber manu-
facturers somewhat faster than last month, but new busi-
ness is not developing to suit the duck mills. Despite the
decline in cotton there has been absolutely no weakness
manifested by the duck manufacturers. In fact, it is said
that the highest price asked during the season has been
obtained this week for a quantity of duck. This means that
some rubber concern has paid higher than 26 cents for goods.

April has not been over prolific of orders for sheetings, and
the market for this class of textiles is about where we left it
last month. The market, however, can hardly be said to be as
firm as at that time, selling agents being somewhat easier to
deal with, though prices have not been altered. Buying has
been of a hand to mouth character, consumers hoping to see a
decline commensurate with the drop in raw material.

PRICES CURRENT FOR SHEETINGS FOR THE RUBBER TRADE.

Sheetings.			
40° Highgate... 6 ³ / ₄ c.	40° Selkirk... 8 ¹ / ₂ c.	40° Shamrock... 10 c.	
40° Hightown... 7 c.	40° Sellow.... 8 ¹ / ₄ c.	Ducks.	
40° Hobart... 7 ¹ / ₂ c.	48° Mohawk... 11 c.	40° 7 oz. Cran-	
40° Kingstons... 8 c.	40° Marcus... 6 ¹ / ₂ c.	ford... 10 c.	
39° Stonyhurst... 6 c.	40° Mallory... 6 c.	40° 8 oz. Chart-	
39° Sorosis... 5 ³ / ₄ c.	36° Capstans... 4 ¹ / ₂ c.	res... 10 ¹ / ₂ c.	
40° Seefeld... 9 ¹ / ₄ c.	Osnaburgs.	40° 10 oz. Carew... 13 ¹ / ₂ c.	
		40° 11 oz. Carita... 15 c.	

NEWS OF THE AMERICAN RUBBER TRADE.

THE FALCON RUBBER CO. (NEW HAVEN, CONN.)

THIS new company has acquired title to the B. Manville carriage factory, at Wooster and Wallace streets, New Haven, which is being remodelled to suit the requirements of their business. The property has a frontage of 148 feet on both streets. The main factory is a large five-story brick structure, and several adjoining buildings will be used as well. The location is regarded as particularly advantageous, being in close proximity to the steamboat and railroads. Orders have been placed for machinery, and it is expected that the factory will be in operation before another month. Druggists' sundries will be made. [See THE INDIA RUBBER WORLD, April 1, 1904—page 250]

QUAKER CITY RUBBER CO. TO BUILD.

THE Quaker City Rubber Co.—Charles A. Daniel, proprietor (Philadelphia) has taken title to a tract of land in the northwestern section of that city, extending to the Delaware river, on which will be erected a mechanical goods factory, for which plans have been drawn. Mr. W. R. Blowers has been engaged as superintendent of the factory.

UNITED STATES RUBBER CO.—ANNUAL MEETING.

THE twelfth annual meeting of the shareholders, for the election of directors and for the transaction of any other business which may properly be brought before the meeting, will be held at the office of the company in New Brunswick, New Jersey, on Tuesday, May 17, at 12 o'clock, noon. The transfer books were closed on April 23, and will reopen on May 18 at 10 A. M.

NATIONAL INDIA RUBBER CO.

THE New York offices of this company have been removed to No. 42 Broadway, together with the general offices of the United States Rubber Co., through whom the rubber shoe products of the company are marketed. The other departments of the company's production are represented in the New York office as follows: Rubber-insulated wires and cables, by Henry D. Stanley; hose, belting, and packing, Albert B. Pratt; druggists' sundries, Henry D. Archer.

ANNUAL MEETINGS AT EASTHAMPTON.

AT the annual meeting of the Glendale Elastic Fabrics Co. (Easthampton, Massachusetts), on March 26, it was voted to confirm the action of the directors in purchasing the plant of the American Tubing and Webbing Co., at Providence, in December last. The board was reelected, as follows: William G. Bassett (president), Joseph W. Green, Jr. (treasurer and clerk), George A. Alden, Harry E. Converse, William Rapp. At the annual meeting of the Nashawannuck Manufacturing Co., on the same date, the board was reelected, as follows: F. L. Hine of New York (president), George B. Noble of Easthampton (treasurer), James B. Ford of New York, J. D. Sofford of Springfield, Samuel E. Allen of Boston, Joseph W. Green, Jr. of Easthampton.

THE CROCKER RUBBER CO. (BROCKTON, MASS.)

A RETAIL rubber goods store has been opened at No. 139 Main street, Brockton, Massachusetts, by the Crocker Rubber Co., incorporated, of which George I. Crocker is president and manager, Isaac Crocker (Providence, R. I.) treasurer, and Fred. A. Jewell (Lawrence, Mass.) secretary. The store is an attractive one, supplied with a full line, and is the first in Plymouth

county. At the formal opening of the store, on March 26, including a concert, there was a large attendance.—Mr. Isaac Crocker, above named, is also treasurer, as well as president, of the Hope Rubber Co. (Providence, R. I.), Lawrence Rubber Co. (Lawrence, Mass.), and the Lowell (Mass.) Rubber Co.—three prosperous retail rubber goods stores.

NORTH AMERICAN RUBBER CO. IN BANKRUPTCY.

ON April 9 petition in bankruptcy was filed against this company in the United States district court at New York, by Seton Gordon, representing sundry creditors. It is alleged that the company is insolvent, and that it allowed the Manufactured Rubber Co., a creditor, to obtain a preference by a judgment, in which a sale of the assets was made by a city marshal on April 7. The company was originally the American Rubberine Co., incorporated in Delaware, October 13, 1899, the later name being adopted in April, 1900. The product of the company was a composition for the rubber manufacture, called "Rubberine," besides which the company made rubber heels and other mold work, having a factory at Jersey City, New Jersey. The company's office recently was at No. 171 Broadway, New York. Albert G. Voight was president and manager. On April 16 Archibald Douglas was appointed receiver of the company, by Judge Holt, in the United States district court. It is reported that a plan of reorganization is now being discussed. General Daniel E. Sickles, of New York, is reported to be the largest creditor of the company.

THE VOORHEES RUBBER FACTORY.

THE completed factory of the Voorhees Rubber Manufacturing Co. (Jersey City, New Jersey), is one of the most practical of rubber mills in that it is arranged and equipped to produce a very large amount of work. The factory is 285 feet long, of brick, a part of it two stories in height, and the remainder four stories. The machinery equipment is as follows: 20 mixing mills, two of which are of the Jumbo type; 5 calenders, one a four roll machine; 3 large belt presses; 8 vulcanizers, the whole being operated by three engines, two of 250 HP. each, and one auxiliary of 100 HP. In addition there are many labor saving machines and devices of merit, for special work, which are individual to this factory.



THE VOORHEES RUBBER FACTORY.

UNITED STATES RUBBER CO. RESUME DIVIDENDS.

THE board of directors, at their meeting on April 21, declared a dividend of $1\frac{1}{2}$ per cent. on the preferred shares of the company, from the net earnings for the fiscal year ending March 31, 1904, to holders of record at 3 P. M., May 31, payable June 15. This is the first dividend paid by the company since January 31, 1901. Dividends were paid regularly on the preferred shares from the organization of the company, at the rate of 8 per cent. per annum, up to October 31, 1900. The next succeeding payment—in the January following—of 1 per cent. was described as "the second quarterly dividend from the net earnings for the fiscal year," after which no further payments were made. The last dividend on the common shares was paid April 30, 1900.—The dividend now announced will require \$352,882.50.

WATERPROOF CLOTHING TRADE IN CANADA.

WHILE the amount of waterproof and rainproof clothing manufactured in Canada is increasing each year [says the *Toronto Clothier and Haberdasher*] the demand is also increasing, at a tremendous rate, so that the fact that there has been a rapid growth in imports during the last six years does not in any way reflect upon the enterprise of Canadian manufacturers or the merit of their product.

EDWARD G. MILLBURY CO. IN BANKRUPTCY.

SCHEDULES in bankruptcy of the Edward G. Millbury Co., dealers in oiled and rubber clothing, formerly at No. 38 White street, New York, show liabilities of \$12,822 and assets \$8839, consisting of outstanding accounts \$5062, and cash \$3777 in a trust company to the credit of Edward G. Millbury, receiver. The largest creditors are H. M. Sawyer & Son, of East Cambridge, Mass., \$3041, and Effie J. M. Marsh, of Brooklyn, \$5225. Edward G. Millbury was appointed permanent receiver in May, 1903, in proceedings for voluntary dissolution. He was appointed temporary receiver, September 9, 1902, when the liabilities was stated at \$12,064 and the nominal assets \$15,242.

THE B. F. STURTEVANT CO.'S NEW PLANT.

SINCE the removal of the foundry and pattern departments from the B. F. Sturtevant Co.'s plant at Jamaica Plain to its extensive new quarters at Hyde Park, Massachusetts, the moving of the other departments has progressed in earnest. The fan, heater, and electrical departments have already been moved, and the engine and galvanized iron department are in the process of removal and the erection of the machines in the machine shop is well under way. These machines, as well as all the others throughout the works, will be of the most modern and improved type and with the systems of cranes and industrial railways will enable the work to be turned out accurately, rapidly and at a minimum cost. The handsome office building is rounding into shape. The standing finish, quartered oak on the first and second floors and plain oak on the third and fourth floors, is completed and the walls and ceilings are being tinted. The headquarters are still at Jamaica Plain, but in a few months the entire plant will be moved.

THE RUBBER GOODS TRADE IN CHICAGO.

OUR correspondent reports: "Local shoe jobbers are having a breathing spell, now that the weather has become settled, and the tire men and mechanical rubber goods manufacturers' agents are becoming busy. The automobile season is on in full blast, making a good demand for tires. The footwear men, while admitting that the trade is a little quiet—more so than at this period of last year—assert that they have had such a heavy season that a lull should not be complained of. It is generally believed that western retailers and jobbers have taken advantage of their opportunity and have placed their orders so as to get in before the advance in prices which were expected. Others, who were late, are preparing to get in ahead of the advance expected June 1."

AMERICAN PNEUMATIC HORSE COLLAR CO.

A JUDGMENT for \$9298 was entered on April 6 against the American Pneumatic Horse Collar Co., in favor of the City Bank of Battle Creek, Michigan, on a note for \$9000 due four months from September 8, 1903, and unpaid. The summons was served on Dee Allen, president of the company, at No. 25 Broad street, New York, who had been a resident of Battle Creek. The company was incorporated in New Jersey, June 14, 1901, with \$2,000,000 capital authorized.

INTERIOR OF THE HODGMAN RUBBER STORE.

THE illustration gives a view of the interior of the handsome store of the Hodgman Rubber Co. (New York), as seen from the front—Nos. 806-808 Broadway—and extending back to Fourth avenue. A single photographic view does not do full justice to so spacious a storeroom, or give an adequate idea of the number and extent of handsome showcases used in displaying the large line of goods marketed by this company. In addition to the store being so spacious, it is exceptionally well lighted, having the advantage of a row of windows on the right, overlooking the grounds attached to Grace church. Toward the rear, on the left of the storeroom, are the entrances to the offices of the company, which are not only extensive and well arranged, but are also excellently lighted by means of a very large court area in the middle of the block. There are further large accommodations in a basement having the same floor area as the store, and also a sub basement practically of the same extent.



INTERIOR OF STORE—HODGMAN RUBBER CO. (NEW YORK.)

THE COMBINATION RUBBER AND BELTING CO.

THE trustee of this company, in bankruptcy, having applied (in the United States district court in New Jersey) for advice regarding the continuance by him of the business of said company, notice was given to all persons in interest that the matter would be heard before the referee in bankruptcy at Newark, New Jersey, on April 30, at 10 A. M.

FIRST RUBBER CO. (CHICAGO).

THE First Rubber Co. (Chicago), the charter of which was issued by the secretary of state of Illinois on April 18, with an authorized capital of \$50,000, was organized to take over the assets and business of the Western Rubber Manufacturing Co. and the Western Horse Pad Co., both of Chicago. The first of the two companies has been marketing rubber heels and other molded goods, and the second, hoof pads. J. B. Woodruff is president of the new company, but the organization is not yet complete. The offices are in the Marine building, Lake and La Salle streets. It is not planned, for the present, at least, to undertake manufacturing. The new company will place upon the market soon a heel made of cork and rubber combined, which will be lighter in weight than other heels, and is expected to wear longer, while it will cost less than heels made of rubber alone. The horse pad business is growing rapidly in the West. It is estimated that in Chicago pads are used in shoeing 70 per cent. of the horses used on the streets, and that 100,000 pairs were marketed in the city last year.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co. :

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Mar. 26	2,495	13 ⁷ / ₈	13	3,040	54 ¹ / ₂	52 ¹ / ₂
Week ending Apr. 2	3,030	14 ¹ / ₈	13 ³ / ₂	4,165	56 ³ / ₄	54
Week ending Apr. 9	3,425	14 ¹ / ₄	13	6,522	59 ¹ / ₈	56 ¹ / ₂
Week ending Apr. 16	1,200	13 ⁷ / ₈	13 ¹ / ₈	2,800	59 ³ / ₈	57
Week ending Apr. 23	8,750	15	12 ⁵ / ₈	16,622	64 ¹ / ₂	57

RUBBER Goods Manufacturing Co. :

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Mar. 26	2,250	20 ¹ / ₄	19 ¹ / ₄	428	79 ³ / ₄	77 ¹ / ₂
Week ending Apr. 2	1,100	19 ⁷ / ₈	19	380	79	77 ³ / ₄
Week ending Apr. 9	1,020	19 ⁷ / ₈	19 ¹ / ₈	575	79 ³ / ₄	79
Week ending Apr. 16	7,435	19 ¹ / ₂	14 ³ / ₄	810	79	76 ¹ / ₂
Week ending Apr. 23	1,626	16 ³ / ₄	15 ³ / ₈	100	76 ¹ / ₂	76 ¹ / ₂

CONSOLIDATED RUBBER TIRE CO.

THE annual meeting of shareholders will be held on May 2, at the registered office of the company, No. 15 Exchange place, Trenton, New Jersey, at 12 o'clock noon. A special meeting of shareholders will be held on the same day to act upon a resolution of the board of directors to decrease the capital stock from \$5,149,500 to \$1,949,500. The proposed reduced capital is to consist of 11,495 shares of 6 per cent. cumulative preferred stock, and 8000 of common stock—all shares of the par value of \$100. The present holders of common stock under this arrangement would surrender all shares now held and receive in lieu of every five shares so surrendered one share of the new common stock. The report to be presented at the annual meeting will show a surplus of income over expenses for the calendar year 1903 of \$105,292. Deducting a deficit of \$62,535 for the preceding year, the profit and loss surplus at the end of the year stood at \$42,757. A payment has been made this year on the company's bonds.

RUBBER LOSSES IN THE GREAT TORONTO FIRE.

THE most destructive fire in the history of Toronto began at 8 P. M. on April 19, in the business heart of the city, and within eight hours had devastated 14 acres, causing a loss estimated by insurance experts of at least \$13,000,000, on which there was about \$8,885,000 of insurance. Besides large and small warehouses and stores, many factories were swept away, and the number of employes put out of work is estimated at 10,000. A notable spirit of enterprise has been displayed by the firms who suffered losses, and a hopeful spirit prevails with regard to the rebuilding of the burned district. The large warehouse of the Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, at Nos. 47-49 Front street, West, was destroyed, with its contents. While the fire did not attack Front street before 11 P. M., the first editions of the morning newspapers contained large advertisements by the company announcing that the destruction of their warehouse would not interfere with the prompt filling of orders. Their loss was \$500,000, fully covered by insurance. President Warren telegraphed to THE INDIA RUBBER WORLD:

We are all right; organization and *esprit* quite equal to emergency; no interruption of business; fortunately new factory complete and able to fill all orders without inconvenience to customers or ourselves. If any of our friends in the States are hard pressed will gladly help them out with their orders. Everything valuable, except merchandise, safe in our big vaults. Had options for materials and labor necessary to rebuild all arranged for before fire extinguished.

The Toronto branch of the Canadian Rubber Co. of Montreal was burned out; also the warehouse of Ames, Holden Co., Limited, wholesalers of boots and shoes and rubbers, and distributing agents of the Granby Rubber Co. The store of the Toronto Rubber Co. was burned, and that of George E. Boulton & Co., dealers in rubber goods. Also the offices of the I. B. Kleinert Rubber Co. (New York) and of George Borgfeldt & Co., importers of rubber and other goods.

The Gutta Percha and Rubber Manufacturing Co. have established new offices at No. 15 Wellington street, East.

NEW INCORPORATIONS.

THE Crocker Rubber Co. (Brockton, Massachusetts), March 30, 1904, under Massachusetts laws, to conduct a retail rubber store; capital, \$5000. Directors: George I. Crocker, Brockton; Isaac Crocker, Angelo H. Alexander and William J. McCaw, Providence, R. I.; Fred. A. Jewell, Lawrence, Mass.; Daniel S. Latham, Auburn, Mass.; William E. Rowe, Wollaston, Mass. Further mention is made in another column.

= Pennsylvania Rubber Co. of New York, April 6, 1904, under New York laws; capital, \$5000. To conduct the business in this state of the Pennsylvania Rubber Co. (Jeannette, Pennsylvania). Directors: Frank A. Wilcox, Jeannette, Pa.; Jesse Froehlich, New York city; Frank P. Hayes, Brooklyn. New York office: No. 1699 Broadway.

= Banigan Rubber Co. (Boston), April 11, 1904, under Massachusetts laws; capital authorized, \$25,000. Incorporators: Clarence L. Weaver, Newton, Mass.; Edward R. Rice, Buffalo, N. Y.; and Charles W. Barnes, New York city. Mr. Weaver is president and Mr. Rice clerk of the corporation. Object, to sell boot and shoe products of the Joseph Banigan Rubber Co.; store at Nos. 77-79 High street, Boston.

= Hercules Tire Co. (Boston and New York), March 30, 1904, under Massachusetts laws; capital authorized, \$100,000. Incorporators: Charles F. Palmer (president), Boston; Sarah A. Barry (treasurer), Charlestown, Mass.; William T. Rollins (clerk), Charlestown.

= St. John Rubber Tire Co. (New York), April 19, 1904, under New York laws; capital, \$9000. Directors: Benjamin Moore and E. W. Morrow, New York city; H. N. St. John, Brooklyn.

The company have been marketing for some time a special cushion tire.

=The Akron Dental Rubber Co. (Akron, Ohio), April 28, 1904, under Ohio laws. Officers: George W. Aultman, president; Arthur C. Squires, vice president and manager; William J. Aultman, secretary and treasurer. The company will erect a factory to make rubber dental specialties under patents granted to Mr. Squires.

=T. S. Buck Manufacturing Co. (New York city), April 27 1904, under New York laws; to make rubber hand stamps and automatic inking stamps; capital, \$100,000. Directors: Taylor S. Buck, T. L. Buck, Brooklyn; Frank White, Albany. To continue the business of Taylor S. Buck, No. 227 Canal street.

THE GOODYEAR TIRE AND RUBBER CO. (AKRON).

A PLAN of reorganization of this company has been submitted to their creditors, who are offered the option of taking in full for their claims stocks and bonds of the company, or a certain percentage of cash and the remainder in securities. The present capital is \$500,000, in common stock, of which the plan calls for the surrender of \$150,000. There are to be issued \$500,000 of 6 per cent. cumulative preferred shares, and \$300,000 of 10 year 6 per cent. bonds, secured by mortgage on the company's plant. Creditors may take for their claims (A) 40 per cent. in bonds and 60 per cent. in preferred shares, or (B) 20 per cent. in cash and 40 per cent. in bonds. Creditors are invited to deposit their claims with The Cleveland Trust Co. (Cleveland, Ohio) before July 1, 1904, and the plan is to be declared operative whenever claims have been so deposited to a sufficient amount to seem to warrant the success of the reorganization. The company are to have the right to redeem bonds and preferred shares at any time.

RUBBER HOOF PAD SUIT IN TRENTON.

The suit of the Farrier Hoof Pad Co. against Albert E. Wheatcroft for an injunction restraining him from in any disposing of an invention in hoof pads was decided in the Court of Chancery April 4 in favor of the company. By the terms of the settlement the shares of stock of the company claimed by Wheatcroft were to be turned over to him, and he in turn was to turn over the patent right to the company. These mandates of the court have been complied with and the company will continue to manufacture the hoof pads as formerly. [See THE INDIA RUBBER WORLD March, 1904—page 215.]

TRENTON RUBBER MANUFACTURING CO.

THE Trenton Rubber Manufacturing Co. finished and shipped the last week in April a special order for their "Black Bear" packing, consisting of two rolls weighing 1400 pounds each, full 36 inches wide and $\frac{1}{4}$ inch thick. The company state that though the "Black Bear" is a high priced packing it is rapidly growing in popularity. This brand is now marketed with a handsome black finish that is the cause of much favorable comment among dealers. The Trenton company have just completed a complete overhauling of their machinery, and this, with the improvements made a few months ago, places this factory in the best possible shape to turn out goods. The factory is busy and trade is reported good.

TRADE NEWS NOTES.

THE Franklin Rubber Co. (Boston) have begun work on an addition to their factory at Malden, to be of brick, one story high, 62 x 62 feet. Upon the completion of this structure the entire manufacturing plant of the company will be located at Malden with offices and salesrooms as heretofore at No. 105 Summer street, Boston.

=A fire occurred in the factory of the Durham Rubber Co., Limited (Bowmanville, Ontario), on March 28, caused by an

explosion in the cement building. The company's fire brigade extinguished the flames after damage had been done to the extent of \$2000, which is covered by insurance.

=Mr. J. M. Hardy, who is widely known in the trade, will be connected with the Eureka Fire Hose Co. (New York), after May 1, with full charge of their fire hose business in the New England states.

=The Elmira Rubber Co. (Elmira, New York), the incorporation of which was reported in the last INDIA RUBBER WORLD, has for its objects the sale of the Hood Rubber Co.'s brands of boots and shoes. M. H. Murphy is president, M. A. Kelly vice president, and John Keefe secretary and treasurer.

=James A. Young, of the Durham Rubber Co., Limited (Bowmanville, Ontario), was in New York during the month to expedite the shipment of a much delayed lot of cotton duck, much needed at the factory, which lately had been running day and night on mechanical rubber goods, and particularly on pneumatic tires.

=The Standard Last Co. (Montreal, Quebec), organized to combine the shoe last plants operated formerly by the Canadian Rubber Co. and the Granby Rubber Co., are reported to be doing a good business, making lasts for both leather and rubber shoes, and having a capacity for 300 pairs a day.

=The Rubber Soled Leather Shoe Co. (Boston) have been petitioned into involuntary bankruptcy at the instance of creditors whose claims amount to \$1890.73.

=The Marion Insulated Wire and Rubber Co. (Marion, Indiana), who are now manufacturing insulated wires, expect soon to produce a full line of soft rubber goods.

=The factory property occupied by the late firm of George Watkinson & Co., manufacturers of rubber footwear, situated at Thirty-sixth and Reed streets, Philadelphia, has been purchased by the Philadelphia Rubber Works. The latter company are not prepared, however, to announce any plans with regard to the future use of the property.

PERSONAL MENTION.

In the sketch of Mr. James Bennett Forsyth, in the April 1 issue of THE INDIA RUBBER WORLD, a regrettable printer's error gave the date of his becoming superintendent of the Boston Belting Co. as 1886, whereas, of course, the figure should have been 1866.

=John H. Ferris, a prominent citizen of South Norwalk, Connecticut, died in that city on April 10, aged 62 years. He was a director in the Manhattan Rubber Manufacturing Co. (New York), of which his son, Jesse M. Ferris, is treasurer. He was also a large owner of coasting schooner interests, and a director in several South Norwalk institutions. He represented his town in the Connecticut legislature in 1887, and in 1889 was a state senator.

=At the last regular meeting of the New York section of the Society of Chemical Industry, at the Hotel Savoy, on the evening of April 22, the first paper on the program was one on "Resins of Gutta-percha and Allied Gums as a Means of Identification," by Wilton G. Berry, of the laboratory connected with the office of the appraiser of merchandise, United States Customs Service, New York.

=Mr. Arthur E. Friswell has resigned the position of assistant superintendent of the Hartford Rubber Works Co., and leaves soon for a six months' rest in Europe.

=Mr. A. H. Alden, of the New York Commercial Co., sailed for Europe on April 23.

=Mr. Waldemar Scholz, of the firm of Witt & Co., rubber merchants, of Manáos, Brazil, was a visitor to New York by the steamer *Hildebrand*, from that port, which arrived here on March 28. Mr. Scholz returned by the same steamer.

THE RUBBER TRADE IN AKRON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: "Very few tire manufacturers are making money on their tires at this time," said a prominent manufacturer to your correspondent. "Most of the tire contracts for 1904 were made with no thought of the present high price of washed rubber in view, and as a result the companies which did not have a large supply on hand before the price went up have been caught. If the present price continues throughout the season, next year will see a general advance all along the line, not only in tires, but in other lines. We simply cannot make tires at present prices and make money. There must be an increase in the finished product."

"In this connection it is asserted that the tariff is responsible for the large number of tires which are made in this country. It is well known that Americans were not the originators of automobile tires. The first ones were made in France, and had it not been for the tariff, the United States would have been flooded with French tires, and the manufacturers here wouldn't have had the opportunity they had to perfect their inventions along this line. As matters now stand, the American made tire compares favorably, and there are many who claim that it is superior, to the French tire. Akron probably sends out more tires than any other American city. At the last nine automobile shows two companies of this city had 100 per cent. more tires on the machines exhibited than all other manufacturers combined. This is proof that the bulk of the automobile tires used in America are made in Akron."

While much has been written about the selling pool for automobile tire manufacturers, very few people outside of the companies interested have any idea of its practical workings. It is known in a general way that the pool dictates what kind of tires shall be fitted to the various rims allowed by the pool, but very few know how this is accomplished. The selling pool have inspectors who inspect every standard rim made, and unless the rims bear the stamp of the pool the manufacturers' guarantee is no good. For instance, if an automobile owner should return a poorly made tire to a manufacturer upon a rim which did not bear the mark of the selling pool, the manufacturers would refuse to replace the tire, no matter how poorly the tire had worn. In this manner the manufacturers are assured that their tires are fitted to the proper kinds of rims, and their tires are given a chance to show their merits.

* * *

THE Pure Gum Specialty Co., of Barberton, have begun suit in common pleas against Harvey Mitzel and George M. Eby, a partnership doing business in Akron as the Mitzel Rubber Co., asking that they be restrained from using the name "Mitzel" as a trademark. It is alleged that Mitzel was the former owner of the Pure Gum Specialty Co., during which time the trademark "Mitzel" was used upon goods manufactured by them. The trademark is registered, the petition avers, and is a valuable asset of the company.

* * *

THE American Hard Rubber Co. are putting out a three-holed hard rubber bowling ball, patterned after the ball used by Charles Mountain, the famous Milwaukee bowler, and it is meeting with the approval of bowlers very widely. Experiments are also being made with fiber finger holes, some bowlers claiming that the hard rubber makes an unsatisfactory grip, and the company are endeavoring to meet every objection that may be made against the ball.

The American Hard Rubber Co. are getting out souvenirs

for the Akron City Bowling Association in the shape of a miniature bowling ball attached to a pin. The Akron association is trying to capture the state tournament and meeting of the Ohio State Bowling Association, and the delegation from Akron will flood the convention in Columbus in May with hundreds of the little balls.

* * *

THE B. F. Goodrich Co. are engaging in the manufacture of hard rubber specialties needed in their work. Formerly they were engaged extensively in the manufacture of hard rubber goods, for which they maintained a separate plant. This was sold in 1898 to the American Hard Rubber Co., who still operate it. The Goodrich company thereafter bought their hard rubber requirements of the American company, but of late have begun to make them in their own factory. The Diamond Rubber Co., as has been mentioned in THE INDIA RUBBER WORLD, also make hard rubber goods, for which they have an extensive plant.

Mr. E. C. Shaw, superintendent of The B. F. Goodrich Co., is slowly recovering from an attack of sickness in a New York hospital. In his absence Mr. C. C. Goodrich has been in charge of his office.

The officers of the Second National Bank presented Colonel George T. Perkins, president of The B. F. Goodrich Co., and for a number of years president of the bank, with a solid silver loving cup, at the regular monthly meeting of the board of directors held on April 4. This meeting marked the end of Mr. Perkins' connection with the bank as president, although he is still retained on the official board.

* * *

WILL CHRISTY, president of the Firestone Tire and Rubber Company, has become interested in the American Engineering and Reduction Co., and at a recent meeting of the shareholders was made a director, and later elected president of the company. J. R. Nutt, a partner of Mr. Christy and one of the promoters of the People's Hard Rubber Co., is also a director in the company.

Dr. L. E. Sisler, secretary and treasurer of the Firestone Tire and Rubber Co., is being boomed by his friends as delegate from the Akron district to the Republican national convention, and there is reason to believe that he will secure the place.

Mr. H. S. Riddle, mechanical engineer of the Diamond Rubber Co., has resigned. It is understood that he will accept a lucrative position with another company.

Mr. I. R. Bailey has been made general manager of the mechanical department of the Diamond Rubber Co., comprising the belting, packing, hose, and molded goods departments, which heretofore have been under different heads.

THE RUBBER TRADE IN TRENTON.

BY A RESIDENT CORRESPONDENT.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The strike inaugurated January 18, by Trenton Local, No. 4, of the Amalgamated Rubber Workers' Union of America, was formally declared off by the union at a special meeting held on April 3. There were 147 rubber workers present at the meeting and the vote showed 89 in favor of going back to work without conditions, and 58 against it.

James E. O'Donovan, secretary of the union, who was the leader of the strike, said to THE INDIA RUBBER WORLD correspondent: "Primarily the strike failed because of a lack of financial support. While other causes contributed, the need of funds was the weak point in the fight. The union started the strike with barely more than \$1000 in the treasury, in the

belief that contributions enough would be received to keep the fight up. Some assistance was received, but not enough to enable us to hold out. After the third week no benefits were paid except to a few men with large families."

The *Labor Union Advocate*, the official organ of organized labor in Trenton, in its issue of April 9 charged that the strike had failed through the misrepresentations of the national officers of the Rubber Workers' Union, and through the treachery of members of the Trenton union who deserted the strikers and returned to work. Secretary O'Donovan denied the first charge, but admitted that the second was true. Secretary O'Donovan stated that while the union has been seriously crippled by the failure of the strike, it will be continued and reorganized by the faithful ones among the membership.

* * *

THE old rubber mill at Morrisville, Trenton's Pennsylvania suburb, which was abandoned a few months ago by the Vulcanized Rubber Co., is a historic building, and of especial interest now that Morrisville citizens are preparing to celebrate the centennial of the village, on May 17. The old mill was built by Robert Morris, the founder of Morrisville and the financier of the war of the American revolution, who lived near the site of the mill and erected the building as his stables. There is still on the roof the original cupola, topped with a galloping horse as a weather vane. Robert Morris made possible the victory of Washington at the battle of Trenton, which turned the tide of the revolution. Washington with his army was encamped on the Pennsylvania side of the river and had his sloop upon the Hessians all planned, but boats and supplies were lacking. Mr. Morris on his own security raised \$10,000 among his Quaker neighbors and furnished General Washington the needed supplies.

Later the stables were used by General Moreau, who came to America with Joseph Bonaparte, brother of Napoleon, and Waddell, who were compelled to leave France after the battle of Waterloo. General Moreau and Waddell settled near Morrisville, and Bonaparte at Bordentown. Still later the building was used as a stable by the Trenton and Philadelphia railroad, out of which grew the present main line of the Pennsylvania railroad from New York to Philadelphia. The first section of the old road mentioned, extended from Morrisville to Bristol, and before the bridge across the Delaware at Trenton was built, horses were used as the motive power; hence the need of a stable. When steam was adopted, the old stable was turned into a repair shop.

The factory days of the historic structure began with the civil war period, when it was used for the manufacture of oil cloth. In its next transformation the building became a pottery and as such was operated by Martin, Potts & Tams, of Trenton.

Its days as a rubber mill date from 1873, when Dr. R. S. Dana and John W. Thompson, of Morrisville, organized the Morrisville Manufacturing Co. and started a soft rubber factory. Mr. Thompson was president and Dr. Dana treasurer. The first work was the manufacture of wringer rolls under a patent of John Mackechney, who was made foreman of the works. This not proving successful, the work was changed to the making of hose, car springs, etc., and later a hard rubber department was started, in which surgical battery receivers and similar goods were made.

Dr. Dana states that the firm also did a heavy business in floor cloths. This factory was the first to make these in rolls of unlimited lengths; previously cloths about $8 \times 2\frac{1}{2}$ feet, made in molds, were the largest manufactured. This firm lasted about seven years and the last year of its existence Dr.

Dana was the manager of the factory. He had become the owner of the building, and at the dissolution of the Morrisville Manufacturing Co. rented it to James F. Brook, founder of the Globe Rubber Co., of Trenton. Mr. Brook only retained it about three months. Then a man named Banks leased it for the making of hard rubber goods. Mr. Banks originated the Keystone Co., which later moved to Hoboken.

The next step was when S. S. Sonneborn operated it under the Keystone lease. Some time later Myer Dittenhoefer, now president of the Vulcanized Rubber Co., who at that time had become one of the leading spirits in the Keystone Co., came to Morrisville and organized the Goodyear Vulcanite Co. This concern operated the factory successfully and added a number of frame buildings to the old brick structure. This firm was changed to the Vulcanized Rubber Co. which built the splendid new factory in Morrisville. It is understood that the lease under which the Vulcanized Rubber Co. operated the factory has two years yet to run. It is understood that the company will tear down the frame buildings which it erected and then endeavored to dispose of the lease.

* * *

THE Woven Steel Hose and Rubber Co. have reflected the old officers: John S. Broughton president, John H. Janeway, Jr., vice president, Karl G. Roebeling treasurer. Manager Kelso states that the sales of this company are considerably ahead of those of last year. The company is putting on the market a new brand of hose, known as convex steel armored, for air, water, or steam pressure. The armor is a special pattern, rolled at the Roebeling mills in Trenton, and applied to the hose by special machinery.

* * *

WORK has been commenced by the Hamilton Rubber Manufacturing Co. on the construction of a new frame storehouse, to measure 40×200 feet. The land owned by the company between their factory and the Pennsylvania railroad is being enclosed with a substantial fence. The company's coal trestle, which was damaged recently by the coal igniting and burning for some time, has been repaired. The company report that the new artesian well is a success and the whole supply of water needed is secured from it.

* * *

No decision has been given yet in the suit of the Eureka Fire Hose Co. (Jersey City) against the Eureka Rubber Manufacturing Co. of Trenton for an order restraining the latter company from using the word "Eureka". Argument on the evidence in the case took place before Vice Chancellor Emory in Newark on April 4, and he still has the matter under advisement.

The Consolidated Rubber Co. report business as rushing, with orders booked two months ahead. Manager Harry E. Evans stated that the company were as busy as they cared to be.

William McCabe, aged 28, assistant engineer at the factory of the Crescent Belting and Packing Co., had his left hand so badly crushed in a mixing mill in the factory on April 15, that amputation was necessary. He was on duty with the night turn, and, the superintendent says, had no orders to go near the mill, as that was not a part of his work.

The Crescent Belting and Packing Co. report business as unusually good, and state that the output of hose this season will exceed that of any previous year. The mill is being operated steadily, night and day. A satisfactory number of orders are being booked ahead.

The rubber cutters at the mill of the Lambertville Rubber Co. have formed a union and elected George Hartman president, Frank Cole secretary, and Horatio Ege treasurer.

ADDITIONAL TRADE NOTES.

THE four members of Boston Rubber Garment Workers' Union, No. 174, including President Nurenberg, mentioned in the last INDIA RUBBER WORLD as having been expelled for going back to their work in the Union Rubber Co.'s factory while a strike was in progress there, were reinstated in the Union on April 21. Meanwhile, the strike of the garment makers, ended on March 17, had been declared on again.

=The foremen and clerks of L. Candee & Co, (New Haven, Connecticut), to the number of fifty, on the evening of April 20, tendered a complimentary banquet to their superintendent, Mr. John H. Pearce, at the Tontine Hotel, New Haven.

=The Consolidated Rubber Tire Co. (New York) have leased the premises No. 2334 Olive street, St. Louis, which are being remodelled for their use.

=The new courthouse now building at Syracuse, New York, will be floored with the "Interlocking" tiling of the New York Belting and Packing Co., Limited. The original contract was for marble floors, but this was changed by the board of supervisors.

=At the recent annual town meeting of Cranston, Rhode Island, a resolution to exempt the Atlantic Rubber Shoe Co. from taxation for five years was defeated.

=The Russell Manufacturing Co. have decided to equip their

plant at Rockfall, Connecticut, devoted hitherto to the making of cotton yarns, with looms for the manufacture of elastic webbing. Webbing is now made at some of the company's mills in South Farms, in the same state.

=Mr. J. Edwin Davis has joined forces with the Continental Rubber Works (Erie, Pennsylvania) and will have full charge of their sales. The small plant which he has been operating for some time at Buffalo, New York, has been given up, and the machinery disposed of.

=Morgan & Wright (Chicago) are pushing actively a line of rubber heels.

=Frank Venn has been placed in charge of the packing department of the Edgeworth factory of the Boston Rubber Shoe Co., to succeed John N. Williams, resigned. Mr. Williams had occupied the position for 29 years, while Mr. Venn has been in the employ of the company for 25 years. Mr. Venn has been mentioned in THE INDIA RUBBER WORLD several times as the patentee of an ingenious device for marking rubber boots and shoes with sizes.

=Albert B. Beers, broker in India-rubber and commercial paper (New York) will, on May 1, remove from No. 58 William street to No. 68 William street.

=E. H. Cutler, formerly selling agent of the Woonsocket Rubber Co., is now connected with the selling department of the Atlantic Rubber Shoe Co.

REVIEW OF THE CRUDE RUBBER MARKET.

THERE was a somewhat easier condition of the market during the first part of the month, including a decline amounting to 4 cents on higher Pará grades. Latterly, however, prices have advanced to the level which existed at our last report, besides which they are more firmly held. While arrivals have continued heavy, deliveries for consumption have been large.

The report of the last Antwerp sale, in another column, would indicate a declining market there. It should be noted, however, that while the prices obtained were lower in some cases than the brokers' valuations, the valuations had been raised. The prices paid were on a parity with the actual prices of the preceding month.

Respecting the condition of the trade an importer states: "Of course there is a 'corner' on rubber, and a bad one, but it came about in the desire to get rubber for actual consumption and not as a speculation. The United States Rubber Co. bought so heavily for their present and future needs that they got a large share of the stock in sight; then the importers, to cover their 'shorts,' were forced to jump in and get what they could. It is a corner, but a perfectly natural one."

Arrivals at Pará, of all grades, including Caucho, for the past four seasons, have been as follows, in metric tons:

	1900-01.	1901-02.	1902-03.	1903-04.
To December 31.....	11,300	13,630	12,250	13,470
To April 30.	24,350	26,670	26,020	a 26,305

[a—To April 28, 1904.]

Following is a statement of prices of Pará grades, one year ago, one month ago, and on April 29—the current date:

PARÁ.	May 1, '03.	Apr. 1, '04.	Apr. 29,
Islands, fine, new.....	90@91	107@108	108@109
Islands, fine, old.....	92@93	@	@
Upriver, fine, new.....	92@93	109@110	111@112
Upriver, fine, old.....	98@99	110@111	112@113
Islands, coarse, new.....	59@60	67@ 68	64@ 65
Islands, coarse, old.....	@	@	@
Upriver, coarse, new.....	72@73	86@ 87	86@ 87
Upriver, coarse, old.....	@	@	@

Caucho (Peruvian) sheet.....	59@60	69@ 70	69@ 70
Caucho (Peruvian) ball.....	70@71	77@ 78	78@ 79

The market for other sorts in New York, changes in which have been about the same, is as follows:

AFRICAN.		CENTRALS.	
Sierra Leone, 1st quality	95 @96	Esmeralda, sausage...	77 @78
Massai, red.....	95 @96	Guayaquil, strip.....	67 @68
Benguella.	75 @76	Nicaragua, scrap ...	76 @77
Cameroon ball.....	65 @66	Panama, slab.....	58 @59
Accra flake.....	36 @37	Mexican, scrap	74 @75
Lopori ball, prime....	93 @94	Mexican, slab	56 @57
Lopori strip, prime....	92 @93	Mangabeira, sheet....	50 @57
Ikelemba.....	96 @97	EAST INDIAN.	
Madagascar, pinky....	82 @83	Assam.....	83 @84
		Borneo.....	@

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.	6\$800	Upriver, fine.....	8\$000
Islands, coarse.....	3\$700	Upriver, coarse.....	6\$000
Exchange, 12 $\frac{5}{8}$ d.			

Last Manáos advices:

Upriver, fine.....	8\$000	Upriver, coarse.	5\$800
Exchange, 12 $\frac{1}{4}$ d.			

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound—show a slight decline from the last published prices, as follows:

Old Rubber Boots and Shoes—Domestic.....	61 $\frac{1}{4}$ @ 63 $\frac{3}{8}$
Do —Foreign.....	57 $\frac{1}{8}$ @ 59 $\frac{1}{4}$
Pneumatic Bicycle Tires.....	4 @ 41 $\frac{1}{8}$
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	71 $\frac{1}{2}$ @ 73 $\frac{1}{4}$
Heavy Black Rubber.....	4
Air Brake Hose.....	21 $\frac{1}{4}$ @ 23 $\frac{1}{8}$
Fire and Large Hose	13 $\frac{1}{4}$ @ 17 $\frac{1}{8}$
Garden Hose.....	13 $\frac{1}{8}$ @ 17 $\frac{1}{2}$
Matting.....	34 @ 1

In regard to the financial situation, Albert B. Beers, (broker in India-rubber, No. 58 William street, New York) advises us as follows:

"During April money has ruled very easy, and there has been most of the time a good demand for paper at 5@6 per cent. according to grade, and in some instances as low as 4½ per cent. for prime notes."

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.					
	Fine and Medium.	Coarse.	Total 1904.	Total 1903.	Total 1902.
Stocks, February 29.....tons	102	13 = 115		299	704
Arrivals, March.....	1654	762 = 2416		1671	1407
Aggregating.....	1756	775 = 2531		1970	2111
Deliveries, March.....	1539	746 = 2285		1431	1517
Stocks, March 31.....	217	29 = 246		539	594

	PARÁ.			ENGLAND.		
	1904.	1903.	1902.	1904.	1903.	1902.
Stocks, Feb. 29. tons	435	30	1030	380	1145	1610
Arrivals, March.	3970	4030	3115	875	1455	1190
Aggregating.	4405	4060	4145	1255	2600	2800
Deliveries, March.	3800	3805	3585	775	1050	975
Stocks, Mar. 31.	605	255	560	480	1550	1825

	1904.	1903.	1902.
World's visible supply, March 31.....tons	2506	4547	5811
Pará receipts, July 1 to March 31.....	22,345	21,211	22,269
Para receipts of Caucho, same dates.....	3129	2329	2236
Afloat from Pará to United States, March 31.....	392	1229	1232
Afloat from Pará to Europe, March 31.....	783	974	1600

Rubber Receipts at Manaus.

DURING March and the first nine months of the crop season for three years [courtesy of Messrs. Witt & Co.] :

FROM—	MARCH.			JULY-MARCH.		
	1904.	1903.	1902.	1904.	1903.	1902.
Rio Purús—Acre.....tons	234	567	795	5165	5040	5914
Rio Madeira.....	356	206	298	2444	2074	2579
Rio Juruá.....	329	384	505	3111	3155	3194
Rio Javary—Iquitos.....	115	85	198	2183	1415	1210
Rio Solimões.....	46	103	58	735	1268	1450
Rio Negro.....	26	90	58	384	539	317
Total.....	1106	1435	1912	14,022	13,491	14,664
Caucho.....	630	372	567	2760	2139	2393
Total.....	1736	1807	2479	16,782	15,630	17,057

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The easier tone for Pará sorts made itself felt at our inscription sale of April 15. Some fine grades sold at unchanged prices, but less well conditioned lots were cheaper. The average decline may be calculated at about 2½ per cent., or 22 to 25 centimes per kilogram. The principal lots sold as follows:

	Valuation.	Sold at.
137 tons Uelé strips.....francs	9.70	9.57½@ 9.70
31 " Aruwimi.....	9.90	9.65 @ 9.90
22 " Upper Congo ball.....	10.85	10.50 @ 10.60
10 " Mongalla strips.....	10.50	10.15
14 " Uelé strips.....	10.15	10.15
16 " Lomami pieces.....	11.	10.70
14 " Katanga red.....	10.65	10.50

The next monthly sale will take place on May 10 when about 400 tons will be catalogued. Actual stock now about 450 tons.

C. SCHMID & CO., SUCCESSEURS.

Antwerp, Belgium, April 18, 1904.

RUBBER ARRIVALS AT ANTWERP.

MARCH 23.—By the *Anversville*, from the Congo:

Bunge & Co.....(Société Générale Africaine) kilos	127,000
Do.....(Chemins de fer des Grand Lacs)	1,000
Do.....(Société Isangi)	10,000

Bunge & Co.....(Société Anversoise)	28,000
Do.....(Société "La Kotto")	3,000
Do.....(Sultanats du Haut Obangi)	2,000
Société A B I R.....	76,000
W. Mallinckrodt & Co.....(La Lobay)	5,000
Charles Dethier.....(La Haut Sangha)	3,000
Société Coloniale Anversoise.....(Sud Kamerun)	7,000
Do.....(La Lulonga)	3,000
Do.....(Belge du Haut Congo)	7,000
Do.....(Cie. du Kasai)	35,000
Do.....(Cie. de Lomami)	15,000
M. S. Cols.....(Société Baniémbé)	6,000
Comptoir des Produits Coloniaux (Cie. de la N'Goko)	4,000
Do.....(Produits de la Sangha)	1,000
	333,000

APRIL 12.—By the *Philippeville*, from the Congo:

Bunge & Co.....(Société Générale Africaine) kilos	43,000
Do.....(Société Anversoise)	6,000
Do.....Comite Spécial Katanga	19,000
Do.....(Sultanats du Haut Obangi)	11,000
Société A B I R.....	21,000
Société Equatoriale Congolaise.....	5,000
L. & W. Van de Velde.....(Cie. du Kasai)	15,000
W. Mallinckrodt & Co.....(Alimaïenne)	4,000
Do.....(La Lobay)	4,000
M. S. Cols.....(Société L'Ikelemba)	1,000
Société Coloniale Anversoise, (Belge du Haut Congo)	8,000
Do.....(Cie. de Lomami)	1,000
Comptoir des Produits Coloniaux.....	6,000
Do.....	2,700
Charles Dethier.....(La M'Poko)	7,000
Comptoir Commercial Anversoise.....(Société Ibenga)	500
Cie. Commercial des Colonies.....	3,000
	157,200

ANTWERP RUBBER STATISTICS FOR MARCH.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, Jan. 31. kilos	335,090	475,538	984,820	781,100	618,800
Arrivals in March.....	751,077	428,455	258,131	570,052	416,278
Congo sorts.....	646,124	398,745	235,518	528,795	332,587
Other sorts.....	104,953	29,712	22,613	41,257	83,691
Aggregating.....	1,086,167	903,993	1,242,951	1,351,152	1,035,078
Sales in March.....	385,432	632,109	401,273	507,318	300,018
Stocks, March 31.....	700,735	271,884	841,678	843,834	735,060
Arrivals since Jan. 1.....	1,637,802	1,146,128	1,501,489	1,573,310	1,776,314
Congo sorts.....	1,322,806	1,008,997	1,436,687	1,403,291	1,475,996
Other sorts.....	314,996	137,131	64,802	170,017	300,318
Sales since Jan. 1.....	1,547,967	1,532,349	1,074,520	1,343,515	1,333,245

London.

EDWARD TILL & Co. [April 1] report stocks:

	1904.	1903.	1902.
LONDON { Pará sorts.....tons	—	—	—
Borneo.....	4	26	132
Assam and Rangoon.....	6	3	39
Other sorts.....	206	188	438
Total.....	216	217	609
LIVERPOOL { Pará.....	483	1548	1821
Other sorts.....	668	760	896
Total, United Kingdom.....	1367	2525	3326

PRICES PAID DURING MARCH.

	1904.	1903.	1902.
Pará fine, hard.....	4/ 6 @ 4/ 9	3/ 8 @ 3/ 10½	*3/ 0¾ @ 3/ 1½
Do soft.....	4/ 5 @ 4/ 8	3/ 8 @ 3/ 10	†3/ 1 @ 3/ 3½
Negroheads, scrappy.....	3/ 6½ @ 3/ 9	3/ 0½ @ 3/ 1½	2/ 5¼ @ 2/ 7
Do Cametá.....	2/ 10¼ @ 2/ 11½	2/ 5½ @ 2/ 6	2/ 2½ @ 2/ 3
Bolivian.....	4/ 6½ @ 4/ 8	—	3/ 1 @ 3/ 2
	[* Spot. † Forward.]		

EDMUND SCHLÜTER & Co. report [March 31]:

The receipts during March have been larger than were expected, but as the deliveries, especially in America, are larger in proportion, there is no accumulation of unsold Pará rubber at the consuming centers. Reports from the trade would appear to indicate that although the demand will absorb what Pará rubber may arrive during the next few months,

thus preventing a decline in value, the volume of business may not be so large as to necessitate a further advance of prices.

Their preceding report, after analyzing returns of arrivals, deliveries, and stocks, had said:

The figures reveal the remarkable expansion in the trade - - - The general estimate of March, 1904, receipts makes a further reduction of supplies more than probable, and reserve stocks during the next few months, perhaps till the late autumn, are bound to be exceedingly small. Ruling prices would not therefore appear to be at all too high.

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

April 4.—By the steamer *Horatio*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Cauchó.	Total.
Poel & Arnold.....	201,000	47,700	55,200	70,400	374,300
A. T. Morse & Co.....	130,600	25,300	70,600	35,600	262,100
United States Rubber Co.	86,800	18,900	57,400	26,000	189,100
William Wright & Co....	36,300	3,000	17,400	...	56,700
G. Amsinck & Co.....	16,100	300	6,400	3,600	26,400
Lionel Hagenaers & Co..	5,100	...	6,400	...	11,500
New York Commercial Co.	...	...	4,200	...	4,200
Edmund Reeks & Co....	...	...	3,200	...	3,200
Herbst Brothers.....	2,200	...	800	...	3,000
Total.....	478,100	95,200	221,600	135,600	930,500

April 6.—By the steamer *Maranhense*, from Manáos and Pará:

United States Rubber Co.	186,800	42,200	71,300	64,900	365,200
Poel & Arnold.....	147,800	45,100	108,900	19,200	321,000
New York Commercial Co.	99,000	17,900	54,000	2,900	173,800
A. T. Morse & Co.....	30,800	7,700	47,300	22,700	108,500
William Wright & Co....	36,700	3,500	56,100	...	96,300
Charles Ahrenfeldt & Son	...	...	64,400	...	64,400
Lawrence Johnson & Co.	28,900	7,500	2,400	...	38,800
G. Amsinck & Co.....	5,700	400	6,700	20,600	33,400
Thomsen & Co.....	4,100	200	7,700	...	9,000
Lionel Hagenaers & Co..	4,100	...	2,200	...	6,300

Total 540,900 124,500 356,600 194,700 = 1,216,700

April 25.—By the steamer *Hubert*, from Manáos and Pará:

United States Rubber Co.	99,700	25,900	48,700	61,900	236,200
Poel & Arnold.....	45,300	12,400	46,700	46,700	151,100
William Wright & Co....	36,900	9,400	19,600	4,700	70,600
A. T. Morse & Co.....	11,000	2,000	39,800	500	53,300
New York Commercial Co.	9,700	2,400	8,700	...	20,800
Hagemeyer & Brunn....	9,800	2,800	6,300	...	18,900
Lionel Hagenaers & Co..	4,000	...	1,800	...	5,800
G. Amsinck & Co.....	8,200	3,500	8,700	1,700	22,100
Total.....	224,600	58,400	180,300	115,500	578,800

[NOTE.—The steamer *Polyarpa*, from Pará, is due at New York on May 5, with 250 tons Rubber and 50 tons Cauchó.]

PARA RUBBER VIA EUROPE.

APR. 11.—By the *Umbria*=Liverpool:

George A. Alden & Co. (Cauchó) ... 51,000

APR. 12.—By the *Kroonland*=Antwerp:

George A. Alden & Co. (Fine) ... 12,000

George A. Alden & Co. (Coarse) ... 1,500

APR. 15.—By the *Cedric*=Liverpool:

Poel & Arnold (Coarse) ... 15,000

Poel & Arnold (Cauchó) ... 13,000

APR. 16.—By the *Campania*=Liverpool:

Poel & Arnold (Cauchó) ... 22,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

MAR. 26.—By the *El Dorado*=New Orleans:

Manhattan Rubber Mfg. Co. ... 6,500

A. T. Morse & Co. ... 6,500

A. N. Rotholz ... 1,000

MAR. 26.—By the *Monterey*=Mexico:

Graham, Hinkley & Co. ... 2,200

Fred Probst & Co. ... 2,000

E. Steiger & Co. ... 1,000

Isaac Kubie & Co. ... 200

MAR. 28.—By the *Pennsylvania*=Hamburg:

Poel & Arnold ... 2,800

MAR. 29.—By the *Yucatan*=Colon:

Hirzel, Feltman & Co. ... 5,000

Livingstone & Co. ... 4,800

Meyer Hecht ... 2,900

A. Santos & Co. ... 2,500

Fred. Probst & Co. ... 2,200

Dumarest & Co. ... 1,800

American Trading Co. ... 1,500

Rosenthal Sons & Co. ... 1,400

W. R. Grace & Co. ... 1,100

Isaac Brandon & Bros. ... 700

G. Amsinck & Co. ... 500

R. G. Barthold ... 500

Bartling & De Leon ... 400

Lawrence Johnson & Co. ... 300

Fidanque Bros & Co. ... 200

MAR. 29.—By the *Altai*=Greytown:

Livingstone & Co. ... 9,000

A. D. Straus & Co. ... 3,500

E. B. Strout ... 3,000

G. Amsinck & Co. ... 2,200

Andreas & Co. ... 2,000

Jimenez & Escobar ... 500

Pedro A. Lopez ... 300

APR. 1.—By the *Jason*=Mexico:

George A. Alden & Co. ... 11,000

H. Marquardt & Co. ... 500

APR. 1.—By the *El Alba*=New Orleans:

A. T. Morse & Co. ... 3,500

George J. Worth ... 3,000

A. N. Rotholz ... 2,000

Eggers & Heinlein ... 2,000

APR. 2.—By the *Bolivia*=Costa Rica, etc.:

Graham Hinkley & Co. ... 1,800

Kunhardt & Co. ... 1,400

Isaac Brandon & Bros. ... 500

Silva, Bussening & Co. ... 500

Charles E. Grillo ... 200

APR. 4.—By the *Thespi*=Bahia:

J. H. Rossbach & Bros. ... 19,500

Hirsch & Kaiser ... 10,000

Eggers & Heinlein ... 5,700

A. D. Hitch & Co. ... 3,300

APR. 5.—By the *Alene*=Cartagena:

Sperling & Williams ... 3,500

Isaac Kubie & Co. ... 1,500

American Trading Co. ... 1,200

APR. 5.—By the *Santiago*=Mexico:

George A. Alden & Co. ... 12,000

APR. 6.—By the *City of Washington*=Colon:

Hirzel, Feltman & Co. ... 7,600

G. Amsinck & Co. ... 3,100

Meyer Hecht ... 7,900

Fidanque Bros. & Co. ... 2,800

Piza Nephews & Co. ... 1,600

W. Loalza & Co. ... 1,100

Silva Bussening & Co. ... 400

Eggers & Heinlein ... 400

Isaac Brandon & Bros. ... 400

Fred Peterson & Co. ... 800

Mecke & Co. ... 200

D. A. De Lima & Co. ... 200

Suzarte & Whitney ... 100

APR. 6.—By the *El Dia*=Galveston:

Fred. Probst & Co. ... 4,500

APR. 11.—By the *Proteus*=New Orleans:

A. T. Morse & Co. ... 4,500

G. Amsinck & Co. ... 1,500

Rosenthal Sons & Co. ... 1,000

K. Mandell & Co. ... 300

APR. 12.—By the *Alleghany*=Greytown:

A. D. Straus & Co. ... 2,500

E. B. Strout ... 2,500

Isaac Brandon & Bros. ... 700

A. Held ... 4,600

Isaac Kubie & Co. ... 1,500

APR. 12.—By the *Seguranca*=Colon:

Roldan & Van Sickle ... 6,000

E. B. Strout ... 4,200

Meyer Hecht ... 2,700

Livingstone & Co. ... 2,300

Hirzel, Feltman & Co. ... 1,700

Isaac Brandon & Bros. ... 1,400

Alberto Dumarest ... 2,800

G. Amsinck & Co. ... 1,500

A. Santos & Co. ... 1,000

Andreas & Co. ... 1,000

L. Johnson & Co. ... 800

Smithers, Nordenholt & Co. ... 800

APR. 13.—By the *Manzanillo*=Mexico:

George A. Alden & Co. ... 22,000

H. Marquardt & Co. ... 3,000

Samuels & Cummings ... 2,500

L. N. Chemedlin & Co. ... 1,000

Graham, Hinkley & Co. ... 700

American Trading Co. ... 200

APR. 13.—By the *Brandenburg*=Bremen:

Eggers & Heinlein ... 4,000

APR. 18.—By the *Pretoria*=Hamburg:

Poel & Arnold ... 6,000

APR. 18.—By the *Yumuri*=Mexico:

George A. Alden & Co. ... 3,000

H. Marquardt & Co. ... 500

E. N. Tibbals & Co. ... 200

E. Steiger & Co. ... 300

APR. 19.—By the *Siberia*=Cartagena:

Isaac Brandon & Bros. ... 1,300

Kunhardt & Co. ... 1,100

American Trading Co. ... 1,000

Guterman Rosenfeld & Co. ... 1,100

G. Amsinck & Co. ... 600

D. A. De Lima & Co. ... 300

Cadenas & Co. ... 500

A. D. Straus & Co. ... 500

A. N. Rotholz ... 200

APR. 20.—By the *Alliance*=Colon:

Hirzel, Feltman & Co. ... 7,800

Lawrence Johnson & Co. ... 2,300

A. Rosenthal & Sons ... 3,000

D. N. Carrington & Co. ... 1,400

Meyer Hecht ... 1,200

Roldan & Van Sickle ... 1,200

D. A. De Lima & Co. ... 1,000

Kunhardt & Co. ... 400

Pomares & Cushman ... 300

Eggers & Heinlein ... 500

APR. 20.—By the *Byron*=Bahia:

J. H. Rossbach & Bros. ... 40,000

Hirsch & Kaiser ... 30,000

A. D. Hitch & Co. ... 14,000

APR. 21.—By the *El Siglo*=New Orleans:

A. T. Morse & Co. ... 10,000

A. N. Rotholz ... 5,000

Manhattan Rubber Mfg. Co. ... 4,500

AFRICANS.

MAR. 28.—By the *Etruria*=Liverpool:

United States Rubber Co. ... 18,000

MAR. 28.—By the *Pennsylvania*=Hamburg:

A. T. Morse & Co. ... 27,000

Poel & Arnold ... 15,000

MAR. 30.—By the *Oceanic*=Liverpool:

George A. Alden & Co. ... 45,000

Poel & Arnold ... 42,000

United States Rubber Co. ... 38,000

A. T. Morse & Co. ... 11,000

William Wright & Co. ... 6,000

MAR. 30.—By the *Finland*=Antwerp:

Poel & Arnold ... 11,000

A. T. Morse & Co. ... 7,000

APR. 1.—By the *Potsdam*=Rotterdam:

Poel & Arnold ... 12,000

APR. 2.—By the *Patricia*=Hamburg:

A. T. Morse & Co. ... 28,000

George A. Alden & Co. ... 35,000

Joseph Cantor ... 11,000

AFRICANS—Continued

APR. 4.—By the <i>Tenedos</i> =Lisbon:	
Poel & Arnold.....	57,000
APR. 5.—By the <i>Vaderland</i> =Antwerp:	
George A. Alden & Co.....	290,000
Robinson & Tallman.....	18,000
Poel & Arnold.....	10,600 318,000
APR. 6.—By the <i>Georgie</i> =Liverpool:	
Poel & Arnold.....	34,000
United States Rubber Co.....	13,500 47,500
APR. 7.—By the <i>Teutonic</i> =Liverpool:	
United States Rubber Co.....	72,000
A. T. Morse & Co.....	40,000
Poel & Arnold.....	29,000
George A. Alden & Co.....	26,000
William Wright & Co.....	4,500 171,500
APR. 11.—By the <i>Celtic</i> =Liverpool:	
United States Rubber Co.....	68,000
A. T. Morse & Co.....	24,000 92,000
APR. 11.—By the <i>Belgravia</i> =Hamburg:	
A. T. Morse & Co.....	27,000
George A. Alden & Co.....	11,500 38,500
APR. 11.—By the <i>St. Paul</i> =London:	
Poel & Arnold.....	3,500
Henry A. Gould Co.....	2,000 5,500
APR. 12.—By the <i>Kroonland</i> =Antwerp:	
Poel & Arnold.....	22,000
APR. 13.—By the <i>Ryndam</i> =Rotterdam:	
Poel & Arnold.....	56,000
APR. 13.—By the <i>Cedric</i> =Liverpool:	
George A. Alden & Co.....	11,000
Poel & Arnold.....	6,000
Joseph Cantor.....	9,000 26,000
APR. 16.—By the <i>Campania</i> =Liverpool:	
United States Rubber Co.....	27,000
A. T. Morse & Co.....	13,000
Poel & Arnold.....	11,500 51,000
APR. 19.—By the <i>Peninsular</i> =Lisbon:	
United States Rubber Co.....	67,000

AFRICANS—Continued.

APR. 21.—By the <i>Majestic</i> =Liverpool:	
United States Rubber Co.....	35,000
Poel & Arnold.....	56,000
Henry A. Gould Co.....	2,500
Rubber Trading Co.....	3,500 97,000

EAST INDIAN.

APR. 4.—By the <i>Hudson</i> =Singapore:	
William Wright & Co.....	34,000
Poel & Arnold.....	24,000
Pierre J. Betts.....	11,000
Robert Branss & Co.....	18,000
D. A. Shaw & Co.....	9,500 96,500
APR. 20.—By the <i>Wartenfels</i> =Calcutta:	
Mohl, Schutte & Co.....	3,500

PONTIANAK.

APR. 4.—By the <i>Hudson</i> =Singapore:	
William Wright & Co.....	525,000
Poel & Arnold.....	140,000
Rubber Trading Co.....	45,000
Robert Branss & Co.....	20,000
D. A. Shaw & Co.....	85,000 815,000

GUTTA-PERCHA AND BALATA.

MAR. 31.—By the <i>Oceanic</i> =Liverpool:	
Earle Brothers.....	3,000
APR. 2.—By the <i>Lucania</i> =Liverpool:	
Earle Brothers.....	3,500
APR. 11.—By the <i>Belgravia</i> =Hamburg:	
To order.....	15,000
Kempshall Manufacturing Co.....	1,500 16,500
BALATA.	
MAR. 28.—By the <i>St. Louis</i> =London:	
Henry A. Gould Co.....	7,000
MAR. 28.—By the <i>Maracas</i> =Trinidad:	
George A. Alden & Co.....	3,000
APR. 11.—By the <i>St. Paul</i> =London:	
Henry A. Gould.....	2,500
George A. Alden & Co.....	1,500 4,000

APR. 22.—By the *Grenada*=Trinidad:

George A. Alden & Co.....	11,000
Eggers & Heinlein.....	1,500 12,500

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—MARCH.

Imports:	POUNDS.	VALUE.
India-rubber.....	8,920,932	\$6,266,096
Gutta-percha.....	30,128	18,586
Gutta-jelutong (Pontianak).....	1,420,760	47,533
Total.....	10,371,820	\$6,332,214
Exports:	POUNDS.	VALUE.
India-rubber.....	96,884	\$ 72,513
Reclaimed rubber.....	29,101	3,958
Rubber Scrap Imported.....	1,554,429	\$ 95,763

BOSTON ARRIVALS.

MAR. 3.—By the <i>Bengalia</i> =Hamburg:	POUNDS
George A. Alden & Co.—African.....	95,944
MAR. 7.—By the <i>Sachem</i> =Liverpool:	POUNDS
Poel & Arnold—African.....	5,200
MAR. 9.—By the <i>Cestrian</i> =Liverpool:	POUNDS
Poel & Arnold—African.....	13,540
MAR. 21.—By the <i>Bosnia</i> =Hamburg:	POUNDS
George A. Alden & Co.—African.....	4,850
MAR. 22.—By the <i>Michigan</i> =Liverpool:	POUNDS
Poel & Arnold—African.....	18,413
MAR. 29.—By the <i>Cakmore</i> =Antwerp:	POUNDS
Poel & Arnold—African.....	14,310
MAR. 31.—By the <i>Bohemian</i> =Liverpool:	POUNDS
Poel & Arnold—African.....	14,943
Total.....	167,200
[Value, \$89,603.]	

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
February, 1904.....	9,159,478	237,848	8,921,630	February, 1904.....	5,438,048	3,612,448	1,825,600
January.....	4,982,409	235,498	4,746,911	January.....	4,628,064	3,225,046	1,403,018
Two months, 1904.....	14,141,887	473,346	13,668,541	Two months, 1904.....	10,066,112	6,837,494	3,228,618
Two months, 1903.....	10,727,780	511,395	10,216,385	Two months, 1903.....	9,644,696	6,760,544	2,883,552
Two months, 1902.....	9,621,307	492,495	9,128,812	Two months, 1902.....	11,242,448	5,225,248	6,017,200
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
February, 1904.....	3,312,320	1,337,380	1,974,940	February, 1904.....			
January.....	2,832,500	696,300	2,136,200	January.....	101,640	660	100,980
Two months, 1904.....	6,144,820	2,033,680	4,111,140	Two months, 1904.....			
Two months, 1903.....	5,566,220	2,151,820	3,414,400	Two months, 1903.....	218,020	3,960	214,060
Two months, 1902.....	4,695,460	1,711,160	2,984,300	Two months, 1902.....	310,640	42,240	268,400
FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
February, 1904.....	2,755,940	1,559,360	1,196,580	February, 1904.....	292,380	440	291,940
January.....	805,860	728,860	77,000	January.....	243,100	2,640	240,460
Two months, 1904.....	3,561,800	2,288,220	1,273,580	Two months, 1904.....	535,480	3,080	532,400
Two months, 1903.....	2,399,540	1,567,280	832,260	Two months, 1903.....	477,180	440	476,740
Two months, 1902.....	3,350,380	1,209,340	2,141,040	Two months, 1902.....	440,220	440	439,780
BELGIUM.†							
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.				
February, 1904.....							
January.....	1,379,356	895,228	484,128				
Two months, 1904.....							
Two months, 1903.....	2,137,722	1,800,542	337,180				
Two months, 1902.....	3,501,795	1,467,730	2,034,065				

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canada consumption.

* General Commerce.

† Special Commerce

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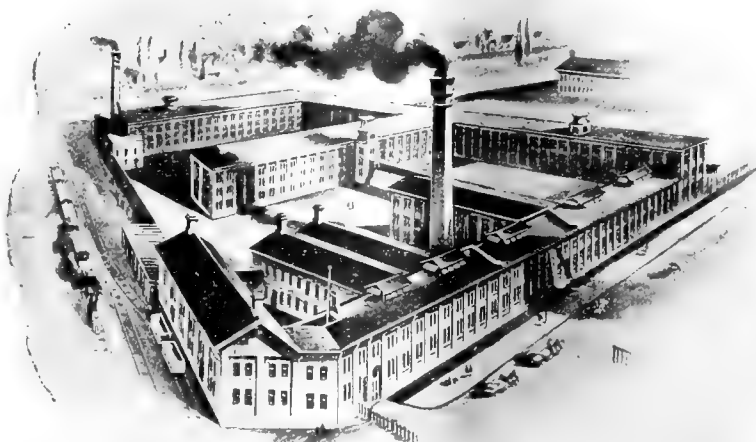
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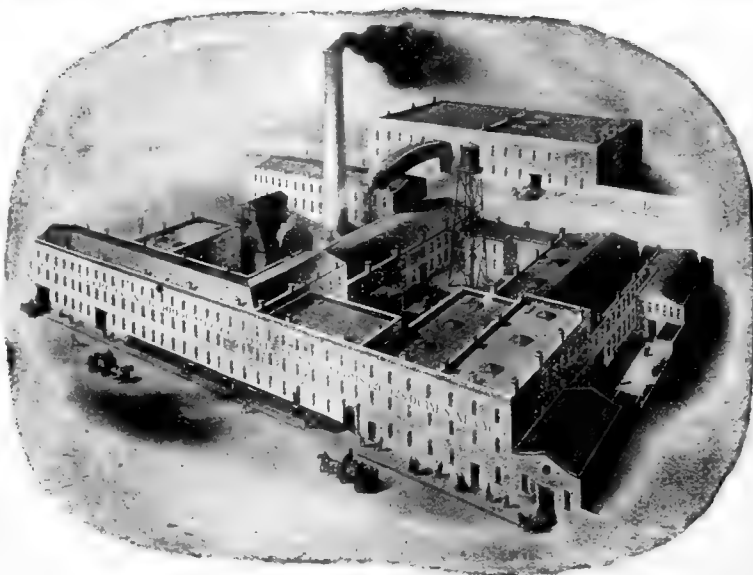
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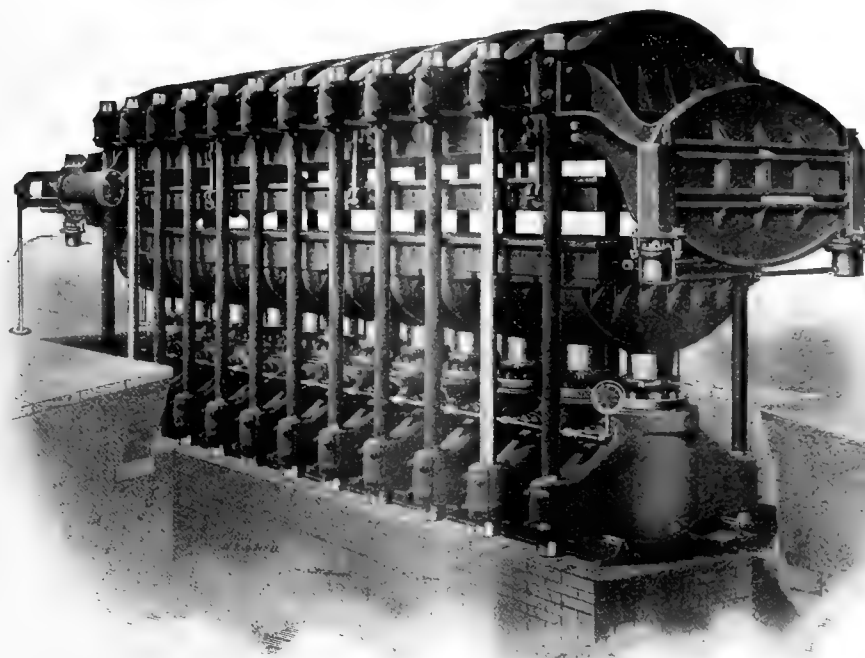
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NO REASON YET TO BE DISCOURAGED.

THE recent success of the rubber planters of Ceylon in marketing the product of their cultivated *Hevea* trees, at the highest prices on record for crude rubber of any kind, seems to have had a disquieting effect upon some of the planters of *Castilloa* in Mexico. At least they are wondering whether they have not made a mistake in planting *Castilloa*, when perhaps by cultivating another species the same investment and the same amount of labor might bring larger returns. Until the favorable results in the Far East were reported, the rubber planters in Mexico were not only satisfied with their progress and prospects, but they were enthusiastic. It remains to be seen whether they should become any less so.

In the first place, it is not certain that the *Hevea* species, the rubber of Pará, are as well adopted to Mexico as to Ceylon and the Malay States. They may yet prove to be—but that is another matter. But Mexico is the home of *Castilloa*, the source of the first rubber of which any written record exists. And it yields a good rubber, a material for which the industry affords a certain and permanent demand. The product of *Castilloa*, as now marketed, is worth less commercially than *Hevea* rubber. So is silver worth less by weight than gold, but this fact neither discourages silver mining nor limits the use of the cheaper metal in the arts. The question is not whether the rubber grown in Ceylon will sell for more than the Mexican product, but whether the Mexican plantations now under way will yield fair returns on the capital invested.

Nobody knows what Mexican rubber, prepared under intelligent supervision, is going to bring, as compared with other rubbers. We know what manufacturers are paying for the stuff which the Mexican Indians carry in dribbles to Tuxtepec and Vera Cruz and Tampico, and which is shipped thence ungraded to New York. But we do not understand that any planters are contemplating the shipment of rubber so prepared. What rubber really costs at the factory is not the price paid to the importer, but it is the cost of the rubber after it has been cleaned and dried.

Thus Pará rubber, imported at \$1 a pound, with 15 per cent. of shrinkage in cleaning, really costs the manufacturer \$1.17½. At the same time Mexican rubber, imported at only 75 cents, with 30 per cent. shrinkage, really costs at the factory \$1.07 a pound. The chief explanation of the high prices obtained by the Ceylon planters is that they don't ship dirt to market; the percentage of shrinkage in their product is almost *nil*. Hence when some Ceylon rubber sold recently in London at \$1.29½ per pound, while Central American rubber brought only 81 cents, this difference alone formed no reason for discouraging the planters of *Castilloa*, which yields the Central sorts. The latter rubber might have brought \$1 or more, if prepared as carefully as the Ceylon rubber.

It is not meant here that, under any method of treatment now understood, rubber absolutely equal to "Para" can be prepared from *Castilloa*; the rubbers are characteristically unlike in important respects. But in comparing the selling prices of rubber, consideration should be given to

the causes for the existing difference in results obtained, not the least of which is due to the degree of care exercised in preparing rubber for market.

It appears that not all of the rubber planters of the Far East are wholly satisfied with their prospects. At least some of them are heard from now and then who fear that somebody else is likely to do better than they are doing. Some of them, for instance, feel that the *Castilloa* will prove a more prolific producer of rubber than the *Hevea*, and therefore more profitable. Some such complaints have led *The Straits Times*, published at Singapore, to assert that the planters have no cause for worry, "for there can be no doubt that they have a wonderful market waiting for all the rubber of any kind that they can produce within this generation."

WHAT BECAME OF THE MONEY?

A LEGAL gentleman who introduced himself at the offices of THE INDIA RUBBER WORLD last September as counsel for Mr. John Cudahy, president of the "Para Rubber Plantation Co", spent two hours in making an argument—for which he deserved to be well compensated by his client—against the publication of articles in our pages showing that to be a fraudulent concern. No matter what might have been done in the past by irresponsible agents of the company, the learned counsel pleaded, the standing of Mr. Cudahy, its president, was such that it should be a "personal guaranty" to every stockholder of the company that it would carry out "every obligation that it has made or shall make." The company was preparing "to broaden its character and enlarge its facilities for useful labor." And the shareholders were assured, in behalf of Mr. Cudahy, of "the direct benefit of his wide experience and great executive ability."

What happened later was that the company took a new name and adopted new tactics for selling its shares. It also stopped paying dividends. In time Mr. Cudahy quietly retired from the company. But what became of his "personal guaranty," and who got the benefit of his "great executive ability?" Also, who got the investors' money?

THE PRESENT PRICES OF COTTON—a cause of no small concern to the rubber trade—if long continued, must inevitably lead to production on an increased scale. But where? It is not probable that the planters of the southern United States will be stimulated by the prevailing prices to double their acreage under cultivation. So long as increased planting, involving an increase of labor, renders liable a fall in prices and a decline in the rate of profit, a large additional production is not reasonably to be looked for. Why should they grow two bales of cotton for no larger net profit than one bale now brings, simply because the rest of the world wants cheaper cotton goods? But the American planter cannot always control the situation; more cotton is consumed abroad than in the United States, and an interest in cotton culture is growing in many directions. And because the English failed, in spite of persistent efforts half a century ago, to make India the source of her cotton supplies, it does not follow that cotton cannot be

grown outside of this country. The fact is that already more than a third of the cotton used is grown abroad, and it may be that in time the only hope of our planters will be in learning how to produce cotton more cheaply than somebody else is doing it.

AND NOW COMES PERU WITH A CLAIM to a goodly slice of the rich rubber territory included in what is known as the Acre district and lately relinquished by Bolivia to Brazil. The basis of Peru's claim is an ancient boundary treaty, but like most ancient treaties that document is capable of two interpretations, and Brazil can support her reading of the treaty with the fact of present actual possession—a very strong point, as against a weaker republic—and the further fact that much of the territory to which Peru makes claim has no outlet except through Brazilian waters. We know what happened when the Bolivian Syndicate planned to operate on the Acre and found the Brazilian waterways closed to it. The new complication will tend to interfere with rubber production, with the effect of helping to keep up rubber prices, and this will help the Brazilian treasuries, which levy a generous *ad valorem* tax on rubber exports. Brazil's revenues do not suffer from short rubber crops; lessened production means higher prices, and consequent higher export duties per pound.

THE ENORMOUS OUTPUT OF RUBBER FROM AFRICA during the past dozen years was due to the work accomplished by the late Sir Henry M. Stanley, in a larger degree than any other development of rubber production was ever due to the work of a single individual. Stanley not only made the "dark continent" known to the civilized world, but he planned the utilization on a broad scale of the resources of Central Africa, and what is more, he gave practical effect to his own plans. First to realize the importance of the "reservoir of rubber" discovered by him in the Congo basin, he pointed out how, by the building of a railway around the obstructions in the Congo river and the establishment of trading stations in the interior, the rubber could be made available, and its collection a profitable opportunity for employing capital. And he lived to see the full vindication of his views, visionary as they seemed to the world at first.

THE PROMINENT RUBBER MANUFACTURER who has thoroughly tested the new "Colorado rubber" and placed large orders for the material still declines to have his identity revealed. Every manufacturer thus far suspected has positively refused to "acknowledge the corn." Perhaps, after all, there is no such man, and that we have been misled by the irresponsible newspaper reporters. Indeed, it is possible that the confidence of the Colorado people in their native rubber has been maintained through their care not to give the manufacturers of rubber goods an opportunity to express a possibly unfavorable opinion of it.

WE ARE LEARNING GRADUALLY why crude rubber is so high priced. A newspaper in Utah is informed by Mr. John Beck that "last year 5,000,000 pounds were used for tennis balls alone." Now this is a fact not known before by anybody but Mr. Beck. If everybody having private knowledge of what becomes of our rubber imports were to speak out at once, the situation would become much clearer.

A MORE INFORMING REPORT than that of President Colt, on another page, has not been issued by any corporation in this country, to our knowledge.

TO PRESIDENT PORFIRIO DIAZ.

A LETTER, of which the following is a copy, has been addressed to President Porfirio Diaz, of Mexico, and his cabinet, in view of their well known interest in the material development of that progressive republic. The suggestion does not in any sense come from the planters of rubber in Mexico, very many of whom are enthusiastic believers in the ultimate success of their plans, but none the less it is believed that the offer of a bounty as suggested would give a healthful stimulus to the planting interest. The letter reads:

DEAR SIR: In the past five years there has been invested in plantations in Mexico nearly \$20,000,000 of American money, chiefly to grow India-rubber. Investors are now beginning to wish to see the fruits of their faith and labor. At this time, when business is somewhat depressed, and many are taking counsel of their fears, a very little help from your government would put the rubber planting proposition many years ahead. Personally, I am confident that eventually one of the most valuable of the exports of your country will be India-rubber from cultivated trees. I would, therefore, respectfully make the following suggestion:

That your government grant a bounty of five cents a pound for India-rubber from cultivated trees. The rubber should be prepared so that it shows not more than 5 per cent. of moisture. It should also be clean, showing not more than 1 per cent. of foreign material of any sort. If the rubber were prepared in the form of small *tortillas* it would be easy of examination, and the government records showing the aggregate production would stimulate the production and give a fresh impulse to an industry that is of vital interest to the whole industrial world.

Respectfully,

HENRY C. PEARSON,
Editor of THE INDIA RUBBER WORLD.

It is respectfully suggested that those planters who regard the proposal with favor assist with their influence, and represent to the Mexican government their reasons for considering its adoption desirable.

ANALYSIS OF GUTTA-PERCHA RESINS.

AT the last regular meeting of the New York section of the Society of Chemical Industry, at the Chemist's Club, on the evening of April 22, the first paper on the program was one on "Resins of Gutta-percha and Allied Gums as a Means of Identification", by Wilton G. Berry, PH. B., of the laboratory connected with the office of the Appraiser of merchandise, United States custom service, New York.

Mr. Berry described his work as an attempt to contribute to the knowledge of Gutta-percha and allied pseudo gums for the purpose of affording a means of identifying and of differentiating them one from the other. The present paper is preliminary to a series of uniform experimental examinations of the resins and hydrocarbons present. He dealt with the comparative quantitative analyses by treatment of the previously dried material with acetone, alcoholic-potash, and petroleum ether, and extraction of the resins in a uniform manner with boiling absolute alcohol, and the separation of the thus extracted resins into their component resins; soluble and insoluble in cold absolute alcohol.

The object was the determination of—

Saponification value,
Acid value,
Ether value,
Iodine value,
Acetyl value,
Methyl value,
Melting point, solubility, etc.,

—of the individual resins, hoping thus to establish a table of

values whereby the resins of any given specimen may be identified and the identity of the parent gum thus established. The gums thus far experimented on are a few specimens each of Gutta-percha, Chicle, Almeidaia, Tuno, Jelutong (Pontianak), Balata, and *Payena* sp.

It has been found thus far that the resins from several specimens of the same gum have practically the same constants and characteristics, and that the resins from the different species of gums have different constants and characteristics—in some widely different, and in the cases of the gums above cited sufficiently differing to make identification of their parent gum an easy matter. From the gums so far examined it is hoped to establish the fact that the combined evidence of the constants and characteristics of the resins, together with the character of the accompanying hydrocarbons, will show that each species of gum varies from each other sufficiently to make differentiation of unnamed specimens complete, and to establish the fact that every specimen of the same species of gum is alike in the characteristics quoted.

RESUME OF ANALYTICAL WORK.

Gutta-percha.—Resins soft, pasty, yellow.

Chicle.—Resins hard, grayish yellow, brittle.

Tuno.—Resins hard, dark yellow, brittle.

Almeidaia.—Resins hard, brittle, yellow.

Jelutong.—Resins soft, brittle, yellow.

Balata.—Resins turbid liquid, yellow.

Payena.—Resins similar to Chicle resins.

	Saponification value.	Acid value.
* Gutta-percha resins.....	78.5	5
* Gutta-percha (albane).....	83.5	—
* Gutta-percha (fluavil).....	71.45	—
* Chicle resins.....	103.1	Trace
Chicle (resin A).....	129.0	Trace
Chicle (resin B).....	100.8	Trace
† Tuno resins.....	77.3	5.6
† Jelutong.....	77.5	Trace
Almeidaia.....	50.4	11.0
Balata.....	69.2	Trace
† Payena sp.....	103.7	Trace

* Average of 4 specimens. * Average of 2 specimens.

While the saponification values of Gutta-percha, Tuno, and Jelutong resins respectively are almost identical, their separation into component resins corresponding to albane and fluavil of Gutta-percha gives entirely different results from the latter and from each other. The resins of Chicle and *Payena* differ as widely and the accompanying hydrocarbons are fundamentally different.

REPORT OF A GERMAN CABLE WORKS.

THE report for the sixth business year, 1903, of the Land-und Seekabelwerke Actiengesellschaft (Cologne) shows results beyond anticipations. The sales were the largest on record. The fusion of certain electrical concerns, who had been buyers of cable goods, with large manufacturing companies, left the firms who had been supplying the former in a position of having to look for new business in new fields, with the result of very keen competition in prices. The German cable companies are much hampered by the prohibitive tariff of other countries having cable factories of their own. The net earnings of the company for 1903 were 328,106 marks, enabling them, after making liberal addition to the various funds, and carrying over a balance of 41,803 marks, to declare a dividend of 5 per cent. on the paid up capital of 5,250,000 marks. The transactions of the company's factory at St. Petersburg increased, but it was deemed advisable to write off 70,000 marks to cover the deficit, which is less than the preceding year.

The works of this company formerly were the cable department of Franz Clouth—Rheinische Gummiwaaren-Fabrik.

VIEWS OF AN AMAZON MERCHANT.

THE output of rubber from the Amazon river thus far this season has shown an increase over the corresponding months of any preceding year, though it does not follow that, at the close of the season, on June 30, a larger output for the year will be shown. According to a rubber merchant from the Amazon, the annual rise in the rivers made an earlier opening of the navigable season than usual, with the result that rubber began to arrive in the markets from certain streams earlier than in some former years. Besides, there was a higher stage of water than in some years, which was further favorable to shipping interests. The amount of rubber yet to arrive, at any date in the season, is always an unknown quantity at Pará and Manáos, so that the end of the season must arrive before the total production is known. The impression prevails, however, in view of the men and provisions sent upstream this season, that the total "crop" will be larger than in any past year.

[Since this article was written, it appears that arrivals at Pará have already been larger than for any whole year in the past. —THE EDITOR.]

The establishment of peace in the hitherto disputed region of the Acre, while followed of course by a larger production of rubber than during the same months of last season, has not yet resulted in as large arrivals from that source as in former years. No doubt is felt, however, that ultimately the Acre output will be very largely increased. Meanwhile trouble is brewing in another quarter—the upper Juruá river region, to which Peru now lays claim—with the result that smaller shipments of rubber have been made from there. Against this shortage, however, may be considered the somewhat larger arrivals of fine rubber from Iquitos, due, as is supposed, to a certain quantity of rubber which otherwise would find its way down the Juruá, being carried through other channels to the upper Amazon, and thence past Iquitos. These suggestions are offered by the rubber merchant above mentioned.

"When there is a heavy advance in crude rubber prices, who pockets the additional cost?" the Amazon merchant was asked by an INDIA RUBBER WORLD representative.

"The owners of the *seringuals* get it—the first handlers of the rubber," he replied. "Our house are very large buyers of rubber, but only on a commission basis. We never engage in any speculation, and the price of rubber is not a matter of concern to us. The rate of commission is the same, whether the market is high or low, though of course the higher the market, the larger the volume of commissions on a given transaction. Prices are made by supply and demand; if manufacturers are eager for rubber, when stocks are small, prices go up, just as they go down when the conditions are reversed. But when prices do go up, it means more money for the man in charge of gathering rubber and shipping it to the prime markets, as Manáos and Pará."

"What is the effect of higher prices in stimulating the production of rubber?"

"It has an immediate effect if prices happen to be high at the beginning of a season, for then the owners of *seringuals*, the houses which advance supplies, and everybody else concerned in getting out rubber, plan for larger operations, but after the arrangements for the season have been made, it is too late for any advance in rubber prices to have much effect upon production. Higher prices at any time, however, will have a certain effect, since the conditions of the market become known even in the remoter districts. The principal reliance for rubber gathering is on the Cearenses, who leave their homes annually and go up the Amazon to the rubber fields. The most usual

method is for these men to sell the rubber which they gather to the owner of the *seringual* who employs them, and whatever is coming to them after paying for their transportation and subsistence they are able to take home to their families. Naturally they want to make as much as possible, and high prices will induce them to work in weather that otherwise would deter them from work. For instance, in rainy weather the rubber sap may become so saturated with water that it cannot be smoked, yielding only *sernamby* (coarse rubber), and unless prices are very favorable the *seringueros* may prefer to do nothing rather than work under such conditions."

"What is the outlook for the future rubber output in the Amazon valley?"

"It is largely a question of labor. There is no shortage of rubber sources to be feared, but the supply of rubber gatherers is limited, and thus far no alien labor has proved successful. The Cearenses for the most part undertake the risk of going up the Amazon only on account of the frequent droughts in their own district which prevent them from farming. A good year in Ceará would lessen very materially the supply of rubber gatherers from that region. Every year, however, some of the Cearenses who go up the rivers settle there, thus adding to a permanent force of trained rubber workers, which has a favorable effect upon the rubber gathering industry."

NEW TRADE PUBLICATIONS.

UNDER date of June 1 W. D. ALLEN MANUFACTURING Co. (Chicago) issue their Catalogue No. 21 of Belting, Rubber Goods, Mill and General Supplies. It is not only the largest catalogue in this field that has been issued by any house, but comprises a more extensive line of goods—all suitably described and illustrated, and prices given. The Rubber Goods Department, which is a prominent feature, embraces belting, hose for all purposes, packing, gaskets, valves, mats and matting. In the same connection are listed a great variety of hose couplings, nozzles, lawn sprinklers, and the like. It would seem that this book might serve as a complete buyer's directory for any mill supply house. [6¾" × 9¾". 512 pages.]

G. & J. TIRE CO., (Indianapolis, Indiana) issue a booklet of half tones illustrating the tour of Mr. W. A. De Gress, who rode "G. & J." tires to the top of Popocatepetl—claimed to be the highest altitude to which a bicycle has been ridden. [4¾" × 10". 16 pages.]—An attractive new poster has also been received from the company.

GRAND RAPIDS FELT BOOT CO. (Grand Rapids, Michigan) issue their yearly catalogue and price list of Rubber Boots and Shoes, for 1904. A full line of goods is embraced, in first and second quality brands, the latter being stamped "Wolverine Rubber Co." [3¾" × 6". 40 pages.]

ALSO RECEIVED.

BOSTON Woven Hose and Rubber Co., Boston=Boston Spray Nozzle. 8 pages.

The Dunlop Tire Co., Limited, Toronto, Canada=P¹₃¹ Horsescology. [Relates to Horseshoe Pads] 16 pages.

The "Stitch-in-Time" Vulcanizer Co., Topeka, Kansas—"Stitch-in-Time" Vulcanizer [for tire repairs]. 4 pages.

Marsh Rubber Finger Pad Co., Manchester, New Hampshire=Marsh's Hygienic Finger Pad. 8 pages.

Charles Nuhring, No. 907 Walnut street, Cincinnati, Ohio=Interior Fire Hose Appliances [fire hose racks]. 26 pages.

Lamb & Tilden, Washington, D. C.—"All Rubber" Stamps. 8 pages.

Wirt & Knox Manufacturing Co., Philadelphia=Catalogue for 1904. Wirt's Patent Hose Carts, Reels, and Racks. 24 pages.

RUBBER PLANTING IN CEYLON AND THE MALAY STATES.

As Seen by The Editor of "The India Rubber World."

THIRD LETTER.

Tapping Rubber Trees at Peradeniya Garden.—Visit to the New Experiment Station.—Seventy five year old *Ficus Elastica*.—The Stump Speech.—Kandy.—Temple of the Sacred Tooth.—Hotel Tips.—On the Way to Kalatura.—Early Tea at the "Rest House."—Mr. Harrison and Culoden Estate.

SPEAKING again of canker, and the absence of the disease on the South American *Hevea* trees, Mr. Carruthers said that it was quite possible that individual trees there might have been attacked by it, but as the trees are wild, and grow singly, the disease, after exhausting its victim, would probably die out, as it would have no other *Hevea* near enough to reach. This of course led up to what has been proved since planting of any sort has been on any considerable scale. That is the occurrence of diseases and insects unknown before, but which found in great plantings of a single kind the most favorable field for rapid growth and reproduction.



"HEVEA BRASILIENSIS."

[Leaves and nuts on greatly reduced scale.]

It was while discussing these subjects that we visited the administration buildings of the gardens. These are neat and business like, and with their tropical setting form a very pretty picture. We visited the museum, where sections of the woods in which the island is very rich are displayed; while seeds, fruits, and anything pertaining to the life of the plant growths is carefully prepared and preserved. He also showed me the offices of Director Willis, his own laboratory—where some very interesting experiments in determining the vitality of the *Hevea* nut were then being carried on—introduced me to Mr. E. E. Green, F.E.S., the government entomologist, and then led me to some of the 15 year old Pará trees, which we tapped. It was really too near the middle of the day for the latex to do more than ooze out very slowly. The tool used is like that shown in the illustration, and is so small that at first it would seem to be of little use, particularly when one has in

mind *machete* work. It only needed a very few cuts with it, however, to convince me of its usefulness; indeed, for the *Hevea* it is far superior to any form of *machete* that I have seen. The incision is really a drawing cut that takes out a strip of bark, laying the cambium bare. The cut is clean, small, and may be made by the most unskilful coolie with but little chance of injuring the tree. I had with me a small two bladed tapping axe invented by a friend in the United States, which I had brought along to test. We all tried it, but the simple little tool far outdistanced it. Leaving the collecting and straining of the latex to the coolies, Mr. Carruthers took me to his bungalow for breakfast, which meal occurs at noon, and there discussed various phases of rubber planting. In referring to the government plantations of *Hevea*, he said that there were about 150 acres now planted, and it had not been decided yet just how they would be administered. According to his figuring, these plantings cost about 1200 rupees [= \$389 32] an acre when matured. If they are to be leased under proper restrictions, the opinion seemed to be that the government should not reap more than 5 per cent. interest on its venture. But



"HEVEA" RUBBER TREE.

[Suspended, to show extensive lateral root growth.]



SATINWOOD BRIDGE, PERADENIYA.

most of the experts seemed to think that it would be better for the government to sell the plantations as near cost as possible. For further information he referred me to Mr. F. Lewis, the assistant conservator of forests, Colombo.

The following morning we crossed the Mahaweli river, a deep swift muddy stream flowing by the gardens, to visit the great experiment stations that are under the charge of Mr. Herbert Wright, A. R. C. S. There is no bridge, so one is ferried across in a very narrow wooden dugout, with the usual outrigger one side to prevent upsetting. This experiment garden is new, and contains about 1200 acres I believe, and takes in the native villages of Gangaruwa and Yatiyalagala.

Mr. Wright kindly piloted me over the sections devoted to rubber planting. Just to see what the *Castilloa* and the Ceara rubber will do in that climate under varying conditions, he has many different plots, both in the shade and in the open. Perhaps the most interesting is the planting the former where it is shaded by cocoanut trees. All of these rubber plots were small of course, and the trees very young, so that at the present it is impossible to say what results will be attained.

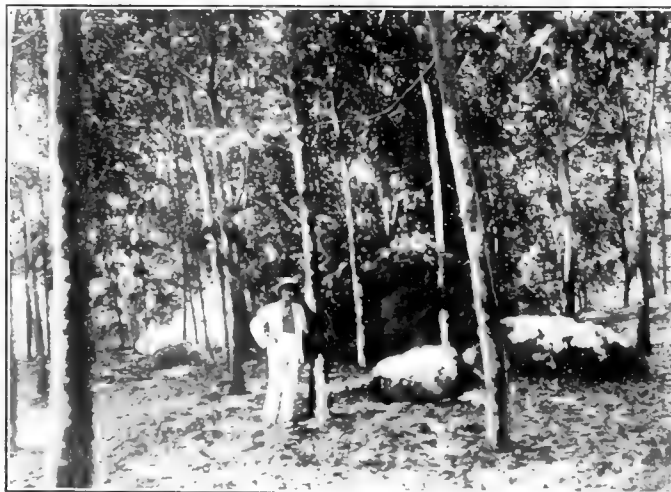
As we walked about the place it occurred to me to learn just how hot it was, and I found that it was 127° F. in the sun, and the guess was that it was about 85° in the shade. As we were in the sun most of the time, we had no reason to feel a chill.

In the afternoon, Director Willis having returned, we had a look at the *Ficus elastica* trees planted some 75 years ago. They are huge growths, and unlike the Straits trees of the same name, do not send down aerial roots, but instead form great root buttresses. They produce little if any latex, as my own tapping experiments abundantly proved. Further than that, they are dying, so that every now and then it becomes necessary to fell

one of them, for if it unexpectedly dropped its 150 feet of length across the carriage road, a serious accident might result.

Speaking of the *Hevea* plantings in the island, Mr. Willis said that at that time there were about 11,000 acres, and as the annual production of seeds was about 3,000,000, he thought that the planting increase would be about 5000 acres annually. He said that the *Hevea* could undoubtedly be planted in sheltered valleys, up to 4000 feet altitude. In many situations the trees would mature more slowly, its growth depending upon the rainfall, and the richness of the soil. At Peradeniya those that had matured more slowly had produced latex as good and abundant as had the others. The *Castilloa* had proved itself more tender than he could wish, and the general sentiment among the planters was that it would not be as profitable a venture. Speaking of rainfall at Peradeniya, they could always reckon upon 90 inches quite well distributed. Labor of course is very cheap, 10 cents a day being the regular wage, shelter being furnished, but not food or clothing.

As an incident to this visit, I walked over the gardens, by well kept roads, shaded by magnificent trees, and visited the "hot house" for orchids. As there is also a tea factory near the gardens, Mr. Willis was good enough to take me through it, and show me every process, the plucking, withering, rolling, drying, sorting, and packing, all of which was most interesting. After taking leave of Director Willis and his good wife and Mr. and Mrs. Carruthers, and all who had made my stay so pleasant, I took the train for Kandy, four miles away, where I planned to spend the afternoon with a steamer friend, and do a bit of sightseeing. As I waited for the train I was conscious of careful inspection on the part of a man near me. He was a nice, wellfed, self satisfied old gentleman, who sat by my side in one of the three cane seated chairs that stand on the depot platform for the use of the white patrons of the railroad.



"HEVEA" AT EDANGODA.

[Government Forest Department plantation, 8 years old. Mr. F. Lewis, assistant conservator of forests.]



RUBBER TREES KILLED BY FLOOD.

[Part of a Forest Department *Hevea* plantation in a valley subject to flood, showing the way in which the flooded trees died off. 1898.]



CEARA RUBBER TREE.
[At Polgahawella; planted about 1886.]

"You couldn't have cane bottomed chairs in a railway station in America, now, could you?" said he to me.

"Why not?" I asked, much surprised.

"On account of the extraordinary habit you Americans have of standing on chairs, and making stump speeches," he responded with conviction.

That he was in dead earnest, and that no denial of mine would affect his belief, one look at his countenance showed. It seemed a pity that he should not add to his store of knowledge along that line, so I said carelessly:

"That of course used to be so a few years ago. Indeed, it was a great nuisance. In public and in private, at the theater, at concerts, at receptions, even in church, stump speakers would suddenly mount chairs and harangue all in sight. It was a disease, you know, caused by a germ that was bred in cotton fields of New Hampshire."

"Fancy!" gasped my listener.

"Oh yes, pure and simple," I continued (referring to his exclamation). "The germ is known as the *Septennis vociferens*, and I may say modestly that it was due to a little invention of my own that it is no longer feared in America."

"How interesting! And pray what was your invention?"

"Is it possible that you never heard of Pearson's Patent Orator Discourager?" I asked with pained surprise. "It sold very well; indeed, I made a comfortable sum out of it. Quite simple it was, but it did the work. It was, in a word, a semi-spherical rubber spring, so placed beneath the chair bottom that when one tried to step there, he was instantly thrown over backwards, the shock killing the germ, but rarely injuring the man. If, however, one sat in the chair, the spring had no effect."

"Very ingenious! A most excellent device! I congratulate you!" exclaimed my listener, warmly. "Of course it was only useful in your own country."

"I was coming to that. Having sold all I can in America, I am now about to prepare a foreign market for it."

"But—but no one makes stump speeches *here*, for instance!" he said.

"Ah, that's just it. They don't now, but they will. Our

laboratory is working night and day producing healthy cultures of the germ. I am traveling around the world planting them everywhere. They are invisible practically. The back of your chair this moment is covered with them where my hand rested before you came along. Here is my train. Good bye."

As the train left the station, a once peaceful and self satisfied encyclopedia of American habits, with red face and anxious mien, was standing far away from the three chairs, and making a stump speech to a large crowd of bewildered coolies. Those germs worked so quickly on him that I almost believed in their existence.

A few minutes later I was in Kandy, and comfortably established at the Queen's Hotel.

The city of Kandy (Hill town) is noted chiefly as having been the seat of the Kandyan kings, the possessor of the temple of the Sacred Tooth, and at the present time for having only one hotel, "The Queen's," where a German tourist finds good entertainment for about \$2 a day, while an American or an Englishman must pay \$5. The city lies in a lovely valley, and is built around an artificial lake, on an island in the middle of which once stood the royal harem. The walks and drives around the city, over beautifully kept roads that ascend with only the slightest grades, are simply ideal.

As a matter of duty I visited the Buddhist temple of the Sacred Tooth during service. It was after nightfall, and the beating of the tom toms and noise of conches was almost deafening. I secured a guide at the main entrance, or rather he secured me, and, accompanied by two self elected explainers, and a boy carrying a lighted candle, we went from one shrine to another, giving up contributions of small change before each, jostled by crowding worshippers laden with fruit and flowers.



PORTION OF OLD "HEVEA" TREE.

[Showing proper healing of wounds that do not pass through the cambium, and injury caused by those that go too deep. Wounds made by chisel and mallet. Heneratgoda Garden; tree 13 years old.]

Of the things that linger in my memory, the library of Cingalese sacred literature is most prominent. There are hundreds of volumes, the leaves of the books being strips of fiber from the Tallipot palm, the letters being etched into the surface and then filled with ink. They are beautifully bound in gold and silver, and ornamented with jewels. There was also an image of the god, three feet high, of solid gold, as well as one carved out of a single block of crystal some 10 inches in height. Then there was copper, ivory, silver, and gold carving and filagree work that would look just as well in America, but there were too many around. I did not see the Sacred Tooth, which is carefully guarded, and needs an order from the governor before one is permitted to view it. The true believers are sure that it once was a part of Buddha's dental equipment, while the scientists say it belonged to a crocodile.

I didn't tarry long in Kandy, but took the morning train back to Colombo, as I now had more definite knowledge of the typical plantations, how to reach them, as well as letters to the men in charge. Perhaps as a hint to others I should say that when I left the hotel in Kandy after paying my bill, the following servants put in a claim for tips: Bedroom man, bath man, head porter, waiter, doorman, gharri driver, the porter who puts your bag into the train, and any other native who can catch your eye.

It was early in the morning when the writer and Miguel de Silva, the Singalese plant collector at Peradeniya, who was loaned me by Director Willis, entered rickshaws and started for Slave Island station, on our way to Kalutara. For some distance the railroad follows the sea coast, disclosing the beautiful villas of Europeans, native fishing villages, and the blue sea itself. According to custom, Miguel rode with the natives, and I, in the car reserved for the whites, was not able to question him as I had planned. A friendly planter, however, did explain that the land over which we were passing was very valuable, through the palms which grew upon it that were used in the production of the native liquor, "arrak." He said also that the ownership of these palms was most complex, one tree often being owned jointly by as many as five natives. I had noticed that many of them had a wattle of reeds braided about the stem some 6 feet from the ground, and was amused to learn that this was to guard against thieves. It seems that the night climber cannot surmount this apparently flimsy barrier, nor remove it without making such a crackling that the owner is awakened sufficiently to remonstrate—usually with a knife.

Arriving at Kalutara, Miguel appeared, and with a commanding gesture secured a coolie to carry my bag, and we wended our way to the Rest House for breakfast. As the day was already a scorcher, its broad verandas, square rooms, and cement floors gave one an impression of coolness which was truly grateful. Here I had "early tea," consisting of "papaya" (the luscious fruit of the paw paw tree), ham and eggs, bread, butter, and coffee—an excellent meal, the whole charge for which was I believe, 1 rupee.

After breakfast (I would say "early tea") we secured a gharri, drawn by a horse that must have been a survival of the Portugese occupation, so ancient was he, and started off for Tabewwana, 5 miles away, where was another rest house. One advantage of the horse over the automobile, and the slow horse over the fast one, is that it allows one to take in the beauties of the scenery to a greater degree. The languid creature to which I had intrusted myself gave me ample chance to enjoy the cinnamon groves, the cocoanut plantations, and the paddy fields. Besides this, I was interested in the natives, and when we meandered slowly through a village with the houses close to the road, and smelling like a fish glue factory that had soured over night, I simply held my nose, but kept my eyes wide open—and saw much that is not set down here. We tarried at the Rest House at Tabewwana only long enough for noon breakfast and then pushed on for Culloden, which, by the way, is in Neboda, or at least that is the nearest postoffice. The roads were good, as all in Ceylon are, and there are some 4000 miles of them, but the scenery began to show a decided change. The country became more hilly, great masses of black gneiss showing out through the luxuriant foliage. Finally, we ascended a

long hill, turned into a tea plantation and, leaving the gharri, followed a winding pathway to a pretty bungalow situated where it commanded a view of much of the surrounding country and even gave a glimpse of the sea in the far distance. Here I was met and welcomed by Mr. R. W. Harrison, and a neighbor, Mr. J. T. Withers, of Clontarf.

It was really too hot just then to start out to view the rubber, so we sat in huge planters' chairs that have broad shelf like arms that extend far out in front, and arranged so that the lounge can have his feet as high as his head, and talked planting experiences.

Culloden is, of course, primarily a tea estate, beautifully

laid out with fine gravel roads all over it, and not a weed to be seen at any time in all of its broad acres. Indeed, the weeding of crops in Ceylon has been reduced to an exact science. It is all done by contract, and costs thousands of pounds a year, but it effectually stops the danger from fire that an occasional cutting of the weeds invites.

Mr. Harrison, the manager at Culloden, is perhaps the best equipped rubber planter in the island, either from the planting or gathering standpoint. While he is in direct charge of Culloden estate, which will this year produce about 10,500 pounds of Pará rubber, he also has supervision over the following estates: Heatherly, which will produce 3500 pounds; Tudugala, 6000 pounds; Yatupauwa and Edengoda, 5000 pounds. Thus it will be seen that fully one-half of the Ceylon Pará of this year's crop passes through his hands, and in visiting him I was sure to be at the center of the rubber planting interest. It might be well to remember also that this 25,000 pounds annually, with a decided increase each year, comes from about 20,000 trees that on an average are 8 years old.

[TO BE CONTINUED.]



"FICUS BENGALENSIS"—BANYAN TREE.

[In the main street at Kalutara.]

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

THE enhanced prices which have been the necessary consequent of the high price of rubber cannot be considered to have had much effect upon the volume of trade. People who want rubber goods buy them even if they grumble at the price. As far as the ordinary trade is concerned the unanimity prevailing amongst producers has made the rise in prices easily accomplished and I understand from the American houses which do business in London that, though they own no allegiance to our association of manufacturers, their prices have been raised to a practically corresponding degree in accordance with instructions from America. Where grumbling is chiefly heard is in the card cloth manufacture, as makers are unable to advance their prices in accord with the price of rubber, there being no effective combination to this end.

It is understood that the India-Rubber Manufacturers' Association are considering the subject of fire assurance, presumably with the intention of making representations on the subject to the insurance companies. Certainly there is room for some such action, because there is a tendency to overestimate the risks attaching to such insurances. Of course it depends largely on the precise nature of the manufacture carried on, and it is quite antagonistic to the facts to associate the proofing and purely mechanical branches in the same category as regards risk. As far as really disastrous fires are concerned, it would appear that these have in late years been limited to small establishments for the sorting or reclaiming of waste rubber. Your newspaper reporter, however, does not stop to particularize, and fires in such works are duly chronicled in the press as if the unfortunate affair related to a rubber factory of the North British magnitude. That the insurance companies take a strong view of the risks associated with waste rubber dealing and manipulation is clear from the inability of one concern, which was burnt out some months ago, to effect another insurance, though by the state of the books it was quite clear that there had been no inducement whatever to an act of incendiarism. Although the risk where solvents are not used is really but small, it certainly seems to be the fact that waste rubber, especially ground crumb, is apt on occasions to become overheated and may break into spontaneous combustion. My experience shows me that this fact is not sufficiently known to those who deal in such material, and it would be time well spent to take frequent tests with a thermometer to ascertain if the temperature of any body of material is above the average. This sort of testing I may say is regularly carried out on the coal stacks at the British dockyards where spontaneous combustion is always to be apprehended.

FRANZ CLOUTH, in his book on the rubber manufacture, laments the fact that the German pays so much less for his rubber goods than do the Americans, the consequence being that the German manufacturers have to make inferior articles. I have been reminded of this statement more than once lately in connection with the inspection of dressing plant for metal mines. Certain types of vanners, as I believe I have stated on a previous occasion, have their surface composed of India-rubber and a great disparity is noticeable between the quality of the rubber on American

made machines and on those of German make. The machines I compared were not of the same type, but that does not matter; I merely wish to emphasize that with regard to his rubber surface the German uses a highly compounded mixing which in practice cracks and oxidizes very much sooner than the more elastic rubber to be seen on machines of American origin. My strictures are confined to the rubber alone; I am not saying anything about the relative merits of the metal or woodwork. It may be contended that metal mines are often sold up long before the machinery has time to wear out, and that therefore rubber with a long life is not necessary; but arguments of this sort do not invalidate the comparison which I have made between German and American procedure.

THE recent increase in the use of electricity for lighting and haulage purposes in collieries is proving a substantial source of new business to cable manufacturers. Steam haulage from the working faces to the bottom of the shaft is being rapidly replaced by electricity, the current in the great majority of cases being sent down the shaft. The value of the cables required for a single colliery may easily be in the neighborhood of £1500. Different engineers have their own ideas, of course, as to cables, but the paper insulation of the British Insulated and Helsby cables have been adopted most largely, as far as my personal knowledge extends. It is found that the damp atmosphere of the mine acts upon the lead covering, and for this reason, as well as for mechanical protection, the lead is given a protective coating of hemp and iron. Cables such as these have a long life in the mine shaft, really the only source of danger being from an accidental fall of the cage.—Just as rubber strip is used in jointing rubber cables, the Callender company manufacture their "Bitite" strip sold in coils in boxes ready for use by mains engineers. When this is warmed and applied to the Bitite insulated cable, the two may be pressed into a homogeneous mass, the joint being thus made without the use of any solvent, as in the case of rubber. It should be noted that the Bitite insulation though a pitch product is of quite a different nature to the pitch filling up the troughs in which the cables are laid. This latter is ordinary bitumen, as may be coal tar pitch which has not undergone any special process of manufacture. With regard to the supply of bitumen, it has been said that Callender's have a monopoly of the product of the Trinidad lake; it is open to doubt, however, if this is so, and anyhow the discovery in recent years of similar lakes in Venezuela tends to diminish the value of the acquisition. Certainly a good deal of the pitch they use in laying street mains comes from British tar distilleries.

THE subject of the improvement of cotton belting has long been uppermost in the mind of this firm—if a limited company can be said to have a mind. The latest patent 9944 (1903) seems to indicate that a previous process on machinery for which a good deal of money had been spent, has been found inapplicable or inefficient. In the former patent a solution of Gutta-percha was forced into the interstices of the woven belting by means of vacuum plant, while in the new one strands of Gutta-percha or Balata are to be interspersed among the warp or weft threads, the woven belting being afterwards heated and pressed so as to force the melted or softened substance thoroughly

G. BANHAM & CO.,
LIMITED.

RISE IN
PRICES
OF GOODS.

INSURANCE OF
RUBBER FACTORIES.

MINING
MACHINERY.

through the material to impregnate it. I am unable to speak as to the result of this process at the moment, but hope to be in a position to do so before long.

I DON'T know to what extent the rubber waterproof packing paper has been adopted since its invention, a year or two ago.

WATERPROOF
PACKING
PAPER.

At any rate it has not done much in replacing the material prepared with a face of pitch, this being very largely used by the Manchester packers of textile goods for ocean transit. With regard to this paper, however, serious trouble has been frequently caused by white goods turning a pink color; it seems difficult to assign the cause of the trouble to the pitch, yet no other solution has been arrived at, and there have been several cases in which damages have been paid by the packers as being responsible for the use of defective paper. Though it is difficult on purely chemical grounds to account for the coloration, yet I believe it is a fact that competition has led to the use of inferior pitch. The pitch originally used was what is known as stearin pitch, a body worth to-day about £10 per ton, and it is said that the discoloration of goods has been caused by the substitution of ordinary coal tar pitch for the better product.

AN influential colonist from British Guiana has recently been interviewed in London at the offices of the *Mining Journal*, and what he says about Balata seems to merit repetition. The present governor he describes as an undeniably clever man, but too apt to apply legislative theories not adaptable to every new country. Thus the Balata bleeders are only allowed to cut a ring half way round the tree, and they have to leave the other half untouched to allow the sap to rise, and so prevent the tree from being destroyed. The consequence is they only get 5 pounds of Balata from a tree, the same tree not being bled again for five years. The complaint is made that it is not worth while going on an expedition 300 miles into the interior to get merely 5 pounds from each tree. Reference is made to the fact that in adjacent countries the trees are cut down and yield 30 pounds of Balata each. This probably accounts for the export from Venezuela and Dutch Guiana greatly exceeding that from British Guiana, but at any rate there is the comforting assurance that when the destructive methods followed in the former countries have given their inevitable consequence, British Guiana will have reserves of material to fall back on. Certainly, in face of the stationary demand for Balata and the plenitude of its occurrence, there does not seem much need for prohibitive measures, and there is therefore some basis for grumbling on the part of colonists in British Guiana that they are put at a disadvantage with their neighbors in the prosecution of this trade.

GREAT variations in the quality of this brand as sent to the English market are noticeable, and especially in the figures relative to loss on washing is it difficult to speak generally. Weber, in his book, puts the loss at 25 to 30 per cent., while Clouth has it down as 37 to 42 per cent., a considerable difference being thus shown. Both these authors, of course, speak from their own experience, and English practice supports the one as the other. One firm rarely finds less than 35 to 40 per cent. and considers this quite natural, while another testifies to 33 per cent. as the most found, this being considered rather out of the ordinary. This variation in the water content naturally makes the purchase of this rubber a somewhat speculative business, and it is a safe assumption that the purchaser sometimes comes badly out of the deal. This variation in the amount of the impurities means, of course, that in some cases the rubber requires more washing than in others, and this extra washing will have a tendency to

soften it and alter its behavior under vulcanization. At least this seems a very plausible theory to account for the variations in certain properties of vulcanized goods made largely of Cametá rubber. The general opinion is that Cametá ranks a good second to fine Pará, being more reliable than Negro-heads, and especially since Columbian proved so difficult to obtain, has its use as a second class Pará been on the increase.

As a rule the only specific reference made by rubber tire manufacturers to the composition of their goods is to the finest Pará rubber that can be bought. It is of interest therefore, to note that the Continental company, of Hanover, in a trade circular refer to the rise in price of camphor owing to the war in the Far East. This rise in price, however, it is said, will not be felt by purchasers of tires, as the company have decided to bear the extra burden themselves. In Mr. Pearson's book camphor is referred to as having been used as a solvent for waste rubber, though I imagine only to a very limited extent. About 20 years ago the late Henry Gerner, of New York, came to this country to dispose of his patents for using camphor and Kauri gum in connection with rubber. A considerable sum of money was spent by at least one of our rubber firms in experimenting in his lines, but with a negative result. Camphor is neither cheap nor easy to manipulate and for general purposes it seems to offer no advantages. With regard to the particular use of it by the Continental company I am not in a position to make any comments.

ANOTHER COLORADO RUBBER COMPANY.

THE Continental Crude Rubber and Exploiting Co. was incorporated May 7, 1904, under the laws of Colorado, to extract rubber from wild plants growing in that region, with \$1,000,000 capital. The officers are: Dr. Sol. Ringolsky, president; John Beck, vice president and general manager; E. T. Wells, secretary and treasurer; Henry A. Weicher, mechanical engineer; Antoine Jacob, scientist. The directorate is composed of the above, and O. J. Kennedy and George C. Parkinson. The president of the new company, writing May 10 under a printed letter heading: "Office of Dr. Sol. Ringolsky, dispensing chemist, 1901 Curtis street, Denver, Colorado," says:

"Our company is capitalized for \$1,000,000—par value \$1 per share. We have placed 100,000 shares on the market at 25 cents, the proceeds to be used for the maintenance of an horticultural department. We shall leave nothing unturned in our effort to cultivate the plant, thereby perpetuating the source of supply for our factories. We have three different plants which we have so far discovered and when the season opens up we shall scour the hills for others which we believe exist."

This company is not to be confused with the American Crude Rubber Co., also incorporated at Denver some months ago, with \$1,000,000 capital. They are rival concerns, having different promoters, different processes and mechanical devices, and even employing different botanical names for the shrubs under treatment. At least, the older company is exploiting *Picradenia floribunda utilis*, while the new company is "booming" *Actinella Richardsonii*. The new company control a machine invented by H. A. Weicher, for masticating the rubber yielding shrub, no chemicals being employed in the process. The experimental machine that has been used is said to have a hopper sufficient to hold 1000 pounds of the shrub, which is ground up in 6 hours, producing from 100 to 200 pounds of rubber, "which comes out in chunks resembling bologna sausage; the fiber is cast aside and thrown away." Water is introduced into the machine to facilitate cleaning the rubber.

THE UNITED STATES RUBBER CO.'S BEST YEAR.

THE twelfth annual meeting of the stockholders of the United States Rubber Co. was held at 12 o'clock M., on May 17, at the registered offices of the company in New Jersey, at New Brunswick. The annual reports of the president and treasurer were presented and accepted, and directors elected for the ensuing year. The official reports are presented herewith in full:

PRESIDENT'S ANNUAL REPORT.

NEW BRUNSWICK, NEW JERSEY, May 17, 1904.

TO THE STOCKHOLDERS OF THE UNITED STATES RUBBER CO.: This is the third annual report of the present president of your company, and at the outset I cannot refrain from saying that it is the first report which it has given me pleasure to make and submit for your consideration.

Upon assuming the presidency of your company three years ago, the existing conditions were far from satisfactory. Owing to the abnormally high prices for our manufactured products which had prevailed for some years, many new rubber companies had come into existence. The result was an intense competition, in which the output of this company had declined to a net of \$20,800,000. By January and February, 1901, this competition had resulted in a reduction in prices averaging about 23 per cent., and in the sale by all concerned of goods at or near the actual cost of production. Under these conditions, as always, the evil supplied its own remedy, and only the stronger companies found themselves able to survive the strain of such competition. At the present time not only have we regained our full share of the trade but we have actually doubled the gross sales of our product without any advance in prices except to compensate for the advance in the cost of raw material—the larger product enabling us to run our mills to their full capacity, which decreases materially the cost of production. The gross sales of the company for the year ending March 31, 1901, were \$32,000,000, whereas the gross sales for the present year were \$64,000,000. The "gross" is measured by the list prices which are nearer uniform than the net prices.

In my annual report for 1902 reference was made to the fact that the present management was called upon to adjust a large indebtedness to the company. In the settlement of this claim in the spring of that year, the company was obliged to take over certain interests in other corporations. In consequence the present officers and directors of your company have been obliged to manage not only the business of this company, but also these various outside interests. In a previous report, I stated it to be my opinion that "serious loss has been avoided," and I can now say that through re organization, realization, and adjustment, I feel that statement has been practically made good, although, as a matter of precaution (as will be seen by the treasurer's report), \$500,000 out of the past year's earnings has been reserved for depreciation upon these securities.

Three years ago, after re adjusting the affairs of the company to meet the lower range of prices for goods, and giving rebates to jobbers for the goods they had on hand, in compliance with a custom which then prevailed, the balance sheet showed a deficit. In the statement of two years ago, this deficit had been changed to a surplus of \$12,011.75. In the statement of a year ago, this surplus had increased to \$1,384,460.07. By this year's statement, after carrying to reserve for depreciation of securities, as before stated, \$500,000 and providing for dividend of 1½ per cent. on the preferred stock, payable June 15, 1904, requiring \$352,882.50, there will remain a surplus of \$2,107,218.86.

VOLUME OF BUSINESS.—The volume of business done by the company during the past year is the largest in its history. Three years ago the annual net sales of boots, shoes, and miscellaneous goods were \$20,853,633.94. This year the net sales amount to \$33,396,918.88. This shows an increase of \$12,543,284.94 net, of which \$5,120,288.30 is the increase of last year over the previous year.

ADVANCE IN SUPPLIES.—During the past year there has been a mate-

rial advance in the price of crude rubber and other supplies which compose or enter into the manufacture of our goods. This rise in the cost of raw materials has necessitated the recent advance in the prices of our goods, in order that in the future we may realize a legitimate profit upon our very large sales.

EMPLOYÉS PROFIT-SHARING PLAN.—During the low prices for our stocks members of your executive committee thought it wise to accumulate a block of the preferred stock and a block of the common stock. These stocks are now to be distributed among about 150 of our principal employés under a plan, of which the main features are as follows: A certain number of shares of both the preferred stock and common stock will be transferred to the name of the employé, thereby making him a stockholder in the company. The certificates are then endorsed by him in blank and held by the Meyer Rubber Co., a subsidiary company of the United States Rubber Co., the employé receiving a certificate of agreement to the effect that provided he remains in the employment of the United States Rubber Co. or one of its subsidiary companies till January 1, 1908, he may at his option acquire such stock by paying \$45 a share and interest for the preferred, and \$10 a share and interest for the common, which option, under the same conditions, continues till February 1, 1910. The employé may pay into the treasury of the Meyer Rubber Co. from time to time on account of the purchase of such stock, and in the event of his decision not to take such stock, he shall be entitled to receive his money back with 6 per cent. interest. All dividends upon the stock shall, as declared, be paid over to the employé without his accounting therefor, whether he eventually takes the stock or not, and in no event shall the amount of interest charged on the purchase price of the stock exceed the amount of dividends declared thereon. The full text of this agreement is attached to this report marked exhibit "A."

The object of this plan is not only to give the company's employés a pecuniary benefit, but to bring them in closer touch with its management, and by sharing the gains to be derived from its success, to stimulate them to greater interest and energy in its affairs.

FUNDED INDEBTEDNESS.—On March 15, 1902, the indebtedness of the United States Rubber Co., and of its subsidiary companies, amounting to \$12,000,000, was funded into three year 5 per cent. collateral trust notes. From the earnings of the company since that time \$2,000,000 of these notes have been paid and cancelled, and it is the intention of your management to pay \$2,000,000 more from earnings at or before their maturity, March 15, 1905. In this connection it gives me pleasure to state that there has already been consummated with the same bankers who financed the original loan an agreement for refunding the balance of \$8,000,000 when it becomes due, for a further period of three years. The terms of this agreement we regard as fair and reasonable, and owing to our improved conditions are much more favorable to the company than those upon which the original loan was secured. It is believed that during the three years of the extension the indebtedness will be so far reduced that no further funding of this loan will be necessary, since the quick capital of the company now is such that during some portions of each year it has on hand as much as \$5,000,000 cash. The company and its subsidiary companies then being entirely out of debt a portion of the year could readily borrow on their notes for temporary requirements. Prior to the funding of 1902 their indebtedness of \$12,000,000 was all borrowed in this way.

BOSTON RUBBER SHOE CO. DEBENTURES.—The only other obligation of the company to be provided for in the future is the \$4,800,000 5 per cent. debentures of the Boston Rubber Shoe Co., due August 1, 1908. These debentures (originally \$5,000,000) were given to the former stockholders of the Boston Rubber Shoe Co. as part of the purchase price for the splendid properties of that company. By the terms of the debenture, the Boston Rubber Shoe Co. at all times must have on hand net quick assets in an amount equal to the outstanding debentures, and now the company has on hand in such net quick assets an amount in excess

of such debentures. To provide for the reduction of such debentures between now and the date of their maturity, I would recommend applying annually a certain percentage of the earnings of the Boston Rubber Shoe Co. to such reduction. There can be no difficulty whatsoever, with the very high credit of the Boston company, in extending the balance, if any, that may remain unpaid at maturity.

CRUDE RUBBER.—Your management has given much attention to the subject of crude rubber during the past year, and has consummated arrangements for the establishment of our own purchasing agencies at Pará and Manaós. We also have laid the foundation in another direction for acquiring and handling generally our very large requirements of crude rubber. We are confident that these steps will give us special advantages and facilities never before possessed by this company and not enjoyed by any other consumer of rubber.

STOCKS OF MERCHANDISE ON HAND.—Your company is unusually well stocked with merchandise required for the manufacture of its product, and at prices materially below the present market prices. This will account for the increase of the item in the treasurer's report, "Inventories, Manufactured Goods, and Materials \$16,801,876.28, March 31, 1904," as against \$11,480,783.18, March 31, 1903, and for the decrease in cash—\$1,660,852.62 March 31, 1904, as against \$4,823,830.91 March 31, 1903. This is done in conformity with the policy of your management of purchasing, so far as possible, crude rubber and other materials sufficient to cover all goods that are sold in advance at fixed prices. This action cannot but prove of great advantage to the company and its shareholders, since it secures beyond any doubt a reasonable profit upon all sales of the company's goods.

NEW OFFICES.—Owing to the inadequacy of accommodations the general offices of the company in New York have recently been moved from 15 Murray street to the new office building, "42 Broadway." All the departments of the company are now on the same floor of this commodious building, thereby giving ample space for our officers and employees, besides affording better facilities for communication between the different departments and the transaction of the general business of the company. This has been done with no increase in expense. The company also maintains a warehouse in the jobbing district for the accommodation of local customers.

NON-RESTRICTED SYSTEM OF SELLING GOODS, AND EXPORT TRADE.—The plan of selling our product, which went into effect January 1, 1903, whereby no attempt is made to regulate the prices of our goods

after we have parted with the title to them, has been found to work successfully, even beyond our expectations. While some of our directors were in doubt as to the expediency of the change, all are now agreed that the result has proved the wisdom of the action taken. This is evidenced among other things by the record of the past year, which shows by far the largest volume of business ever transacted by the company.

Our export trade likewise shows an increase over any previous year.

MANUFACTURE OF BY-PRODUCTS.—The company manufactures all its reclaimed rubber, which gives it an article of uniform and superior quality. It also manufactures, under its own patents, all its buckles, the company's consumption of which last year amounted to 11,464,704 pairs, and which are far cheaper and better than any other in the market. It also makes its felt linings for boots, lumbermen's, etc.

CONCENTRATION AND ECONOMIES—During the year much progress has been made in promoting the efficiency of the manufacturing, selling, and accounting departments of the company. A complete system of comparison of costs of the different factories has been inaugurated by the assistant general manager, which already shows a saving of large sums without detracting in any degree from the quality of the goods manufactured. In the selling department, under the manager of sales and manager of branch stores, far greater efficiency and energy prevails than ever before. In the accounting department, under the assistant treasurer, matters have been so systematized that each month the exact result of operations of the company and its subsidiary companies is presented to the directors, and great advantage is derived therefrom, especially through comparisons of the results of the operations of the different mills. This latter will enable the directors to make statements of earnings to the stockholders at each dividend period.

LITIGATION.—In the closing out of its tire business some time ago, the company accepted certain securities, over which there was threatened litigation. This has been satisfactorily adjusted during the year, and the securities converted into cash. All this has been done in such a manner as to leave the most friendly feelings with the large concern that purchased our tire business. There is now no pending litigation which is likely in any way to injuriously affect the company; there being, however, several important suits undetermined which were brought in the interest of the company.

CONDITION OF FACTORIES AND INVENTORIES OF MATERIALS—The high efficiency of our factories has been fully maintained. During the year we have replaced the power plants of several mills, and made ex-

TREASURER'S REPORTS.

UNITED STATES RUBBER CO. AND SUBSIDIARY COMPANIES.

CONSOLIDATED GENERAL BALANCE SHEET, MARCH 31, 1904.

ASSETS.

Property and plants.....	\$47,716,005.04	
Inventories, manufactured goods, and materials.....	\$16,801,876.28	
Cash.....	1,660,852.62	
Bills and loans receivable.....	2,072,313.04	
Accounts receivable.....	6,489,128.76	
Securities owned.....	2,681,649.69	
Miscellaneous assets.....	783,522.40	30,489,342.19
Total Assets.....		\$78,205,347.23

LIABILITIES.

Capital stock, Preferred.....	\$23,525,500.00	
Capital stock, Common.....	23,666,000.00	\$47,191,500.00
Boston Rubber Shoe Co., debentures.....	4,800,000.00	
U. S. Rubber Co., Funding Notes.....	10,000,000.00	
Fixed surpluses (subsidiary companies).....	8,134,849.37	
Loan accounts payable.....	1,622,000.00	
Merchandise accounts payable.....	3,066,232.72	4,688,232.72
Deferred liabilities.....	430,663.78	
Reserve for depreciation of securities.....	500,000.00	
Reserve for dividend [June 15, 1904].....	352,882.50	
Surplus.....	2,107,218.86	
Total Liabilities.....		\$78,205,347.23

UNITED STATES RUBBER CO. AND SUBSIDIARY COMPANIES.

CONSOLIDATED INCOME STATEMENT FOR YEAR ENDING MARCH 31, 1904.

Gross sales, boots and shoes and miscellaneous.....	\$64,553,237.43
Net sales, boots and shoes and miscellaneous.....	\$33,396,918.88
Cost of goods sold.....	28,987,863.20
Manufacturing profits.....	\$ 4,409,055.68
Freight, taxes, insurance, general and selling expenses.....	1,766,178.48
Operating profits.....	\$ 2,642,877.20
Other income.....	187,329.56
Total income.....	\$ 2,830,206.76
<i>Less:</i>	
Interest and commission on Funding Notes and borrowed money.....	\$802,173.67
Interest on Boston Rubber Shoe Co. Debentures.....	240,000.00
Interest allowed customers for prepayments.....	143,097.06
Net income to surplus.....	\$ 1,644,936.03
Deductions for bad debts, etc.....	69,294.74
Total.....	\$ 1,575,641.29
Reserve for depreciation of securities.....	\$500,000.00
Reserve for dividend.....	352,882.50
Surplus for period.....	\$ 722,758.79
Surplus April 1, 1903.....	1,384,460.07
Surplus March 31, 1904.....	\$2,107,218.86

JAMES B. FORD, Treasurer.

tensive improvements in others. All of our inventories this year are taken very much below cost, and had they been taken at cost a much larger profit would have been shown.

FUTURE OUTLOOK.—The continued and permanent prosperity of the United States Rubber Co. seems assured. The property of the company comprises the finest rubber plants in the world. The difficulties which confronted the management three years ago have been overcome. The underlying conditions all point to the continued and permanent prosperity of the company. Not only have we regained our lost trade, but our output has maintained proportions far beyond our expectations. We produce a staple and necessary product, the consumption of which increases, and will continue to increase with the growth of our country. Our production for the year has been over 48,000,000 pairs of rubber boots and shoes. Our credit is the best. Our indebtedness is comparatively small and decreasing. Our mills are maintained at the highest degree of efficiency. Our employes are loyal, and interested in the work of promoting the success of the company. During the past year, as already pointed out, we have introduced important improvements and economies into our manufacturing, purchasing, sales, and accounting departments. These, and other advantages which we possess, will, we feel confident, enable the company to continue low prices, and still to make a fair margin of profit. We believe this policy is wise and conservative, and that it will secure to the company permanently the great volume of business it now enjoys.

As bearing upon the future, I would call special attention to the fact that notwithstanding our very large business of last year, the detailed orders for the first three months of this year show a marked increase over the same period of last year.

Our net profits of the past year of about \$1,500,000 would have been double that amount had it not been for the extraordinary and unlooked for advance in prices of crude rubber and other materials after the prices for goods had been fixed at the beginning of the year. This year we have advanced prices to correspond with the advance in materials.

After the most careful and conservative consideration of the subject, your directors last month determined that they were safe in resuming dividends upon our preferred stock, and declared the first dividend of 1½ per cent. payable June 15, the books closing for this dividend May 31. This step was not taken without the firm conviction on the part of your directors that the company would be able to continue quarterly dividends hereafter, and at the same time gradually to reduce its indebtedness until it is entirely wiped out. We believe the resumption of dividends has come to remain, and we see no reason why, without abandoning the policy of low prices for its goods, the net profits of the company should not from the present continue year by year to increase, and thereby give the fullest satisfaction to all classes of our stockholders.

Respectfully submitted, SAMUEL P. COLT,

President.

THE ANNUAL ELECTION.

FIFTEEN directors were elected, the same as for three years past, though the by-laws since 1899 have provided for nineteen directors. The only change in the list is the substitution of Anthony N. Brady for Ephraim L. Corning, who for some time past has resided in Europe. The board is constituted as follows, the figures in parenthesis indicating the number of full terms for which each member of the board has been elected to date:

WALTER S. BALLOU, Providence, Rhode Island. [2]
E. C. BENEDICT, Greenwich, Connecticut. [3]
ANTHONY N. BRADY, New York city. [1]
SAMUEL P. COLT, Providence, Rhode Island. [13]
E. S. CONVERSE, Boston, Massachusetts. [7]
H. E. CONVERSE, Boston, Massachusetts. [7]
COSTELLO C. CONVERSE, Boston, Massachusetts. [4]
JAMES B. FORD, New York city. [13]
J. HOWARD FORD, New York city. [13]
FRANCIS L. HINE, New York city. [2]
HENRY L. HOTCHKISS, New Haven, Connecticut. [13]
LESTER LELAND, Boston, Massachusetts. [6]
FREDERICK M. SHEPARD, East Orange, New Jersey. [13]
FRANCIS LYNDE STETSON, New York city. [3]
JOHN D. VERMEULE, New York city. [8]

The newly elected board met in New York on May 20 and after organizing, elected the following officers and Executive Committee for the ensuing year:

President—SAMUEL P. COLT.

First Vice President—JAMES B. FORD (succeeding Costello C. Converse).

Second Vice President—LESTER LELAND.

Treasurer—JOHN J. WATSON, Jr. (succeeding James B. Ford).

Assistant Treasurer—W. G. PARSONS (succeeding John J. Watson, Jr.)

Secretary—SAMUEL NORRIS.

Assistant Secretary—JOHN D. CARBERRY.

The Executive Committee consists of Samuel P. Colt, Lester Leland, James B. Ford, Walter S. Ballou (succeeding Costello C. Converse), and E. C. Benedict.

The rubber importing business referred to in President Colt's report will be carried on by a separate corporation under the name General Rubber Co., of which more will be said in another place in this issue.

RUBBER MEN ON THE METRIC SYSTEM.

THE National Association of Manufacturers has been securing opinions from its members in regard to the proposed law for the compulsory use of the metric system in all transactions with any department of the United States government requiring the use of weights and measures; also as to the desirability of the metric system as a basis for factory work, and its advantages, if any, in connection with foreign trade. The answers obtained, and printed in the Association's organ *American Industries* (New York, April 15), are overwhelmingly opposed to the proposed law, opposed to the use of the metric system in the factory work in which the members are interested, and of the opinion that the system would be of little benefit in the extension of export trade. Many members write that the enactment of the proposed law by congress would cause them to cease to bid for government work, for the reason that the adoption of the new system would involve so great an expense in equipping their factories with new standards.

Thirteen rubber manufacturers responded to the Association's circular of inquiries, including the Boston Belting Co., Hamilton Rubber Manufacturing Co., and the Fisk Rubber Co., the other concerns not being named. The purport of their answers is summarized by the Association as follows; many firms not answering all the questions:

Q. 1.—Is there a call for the system in foreign trade? A.—Yes, 2 answers; small, 2; none, 9.

Q. 2.—Proportion of factory work now done on metric system? A.—Small, 1; none, 12.

Q. 3.—Proportion of work done for government on metric system? A.—Five per cent. and over, 1; small, 6; none, 2.

Q. 4.—Is it practicable to use the metric system for government work alone, retaining present standards for other work? A.—Yes, 4; no, 5.

Q. 5.—Would the use of double systems increase the cost of work for the government? A.—No, 1.

Q. 6.—Would such a law as proposed lead to withdrawal from government work? A.—Yes, 1; no, 8.

Q. 7.—Estimated loss from abandoning present standards and adopting the metric system generally? A.—None, 1; large, 7 [the Fisk Rubber Co. mentioned \$5000 to \$10,000 as cost of change].

Q. 8.—Would there be any appreciable advantage from adoption of metric system? A.—Yes, 4; no, 9.

Q. 9.—Would such advantages offset cost of change? A.—Yes, 3; no, 1.

Q. 10.—Should congress enact the proposed law? A.—Yes, 2; non committal, 2; no, 9.

Q. 11.—Should the metric system be made the legal standard of the country? A.—Yes, 3; non committal, 1; no, 9.

THE RUBBER CULTURAL INTEREST.

YIELD OF TWENTY YEAR OLD "HEVEA" TREES.

IN the *Ceylon Observer* of April 11 Mr. R. W. Harrison reported in detail the result of tapping some 20 year old Pará rubber (*Hevea*) trees on the Culloden estate, in Kalatura district, Ceylon, which cannot fail to attract attention. Four trees, particularly selected for experiment for this record, he says "have been tapped regularly since 1891, every known method of tapping having been tried at some time or other." The tapping was begun on January 5. Single oblique cuts were made, about 6 inches apart, around each trunk, extending not higher than 6 feet from the ground. The same cuts were reopened on every alternate day until 15 tappings had been made of each tree. Then a second series of cuts was opened, higher up, and the cuts were reopened for the same number of days. The second series of tappings was somewhat disappointing, as the weather had turned very dry, "and possibly better results might have been obtained if the tapping of the upper section had been delayed a month or six weeks." The results obtained were as follows:

TREES.	Lower Section.	Upper Section.	Total.
A.....	9 lb. 4 oz.	5 lb. 0 oz.	14 lb. 4 oz.
B.....	11 " 0 "	4 " 12 "	15 " 12 "
C.....	5 " 8 "	1 " 12 "	7 " 4 "
D.....	12 " 8 "	4 " 0 "	16 " 8 "
Total.....			53 lb. 12 oz.
Average per tree.....			13 " 7 "

The four trees differed widely in size. Three of them measured in girth as follows, 3 feet from the ground:

A	B	C
8 feet.	7 feet 6 inches.	5 feet 11 inches.

The fourth tree divides naturally, at 2 feet from the ground, into three stems, the respective girths of which, at 3 feet from the ground, are: 4 feet 8 inches, 4 feet 4 inches, and 6 feet 4 inches.

Mr. Harrison intends tapping the same trees again this year, in August and September, and recording the results.

THE OBISPO RUBBER PLANTATION CO.

[Hacienda de San Silverio El Obispo, state of Oaxaca, Mexico. Office: No. 15 William street, New York.]

THE shareholders chose by ballot for the annual inspection this year Mr. John A. Schauweker, a business man of Cleveland, Ohio, who reached the plantation in February, finding in charge Mr. Maxwell F. Riddle, treasurer of the company and general manager of the estate. Mr. Schauweker reported 670 acres in rubber, from six months to 2½ years old and in good condition. Some of the rubber is now too large to permit "side crops" on the same ground, but some other land is devoted to such crops. He reports the production during the year of about 5000 bushels of corn and 100 tons of rice. Considerable clearing was in progress, to prepare for planting this year.

BATAVIA COMPANY, INC.

[Plantation "Batavia," near Santo Domingo, district of Culcatlan, state of Oaxaca, Mexico. Office: Wells Building, Milwaukee, Wisconsin. See THE INDIA RUBBER WORLD, March 1, 1904—page 185.]

THE first annual inspection of Batavia plantation under its present management was made by Ben L. Edgerton, of Oshkosh, Wisconsin, as representative of the shareholders in the company. He reached the property in the latter part of February. He reports nearly 60 acres of rubber growing well, some of it planted in 1900, with 70,000 nursery seedlings for planting this year. Trees 3½ years old measured 31 feet high

and 23½ inches in girth 6 feet from the ground. Over 15,000 coffee trees are in bearing; at the time of Mr. Edgerton's visit the year's yield had been 30,125 pounds, and the gathering was not quite complete. Since July 40,869 coffee trees had been set out. Considerable vanilla had been planted. An experimental garden of 15 acres has been opened for the study of other tropical plants. Edward A. Kummel is the plantation manager (*administrador*).

MEXICO RUBBER CO. OF PROVIDENCE.

[Plantation "Estrella," state of Oaxaca Mexico. Office: No. 10 Weybosset street, Providence, Rhode Island.]

THIS company has been referred to hitherto in these pages as La Estrella Coffee Co. The business was established in 1898, to engage in coffee growing. There are now growing about 250,000 coffee trees, from 3 to 6 years old, besides which about 60,000 rubber trees have been planted. On February 24, 1904, the stockholders voted to make rubber culture the principal business, and therefore amended the name of the company, as printed at the heading of this article. It is proposed to increase the number of rubber trees to 500,000, to provide for which an issue of bonds has been voted.

LARGE YIELD OF "CASTILLOA."

THE amount of rubber that can be taken from one tree has been the subject of much conjecture and the source of many conflicting statements. It is therefore with satisfaction that we here reproduce a photograph of a wild *Castilloa elastica* from which 26 pounds of rubber were taken in 1902. The tree is on a private plantation on the west coast of Guatamala, and is thought to be about thirty years old. The 26 pounds came from two tappings, and in no way injured the tree, as it is still healthy and yielding rubber. Just what condition of dryness the 26 pounds was in when the weights were taken there is no means of knowing, but there would be at least 20 pounds of bone dry rubber.



PROLIFIC "CASTILLOA" TREE IN NICARAGUA.

SCIENTIFIC VULCANIZATION METHODS.

BY CHARLES J. TAGLIABUÈ.

I.—PIPING DEFECTS AND REMEDIES.

THERE are a great variety of helps to the heater man in the way of semi automatic devices, but none of them are effective unless vulcanizer or press is so placed and piped that its skilful handling always results in even cures. And even then the problem is no easy one. And just here it might be well to catalogue a few of the ordinary defects that a steam expert finds in very many rubber factories.

Overtaxing the capacity of the main steam line is a usual defect, and is often supplemented with other faulty piping. Then, too, in many cases a long heater is supplied with steam from one connection, usually at the head. This arrangement does not insure uniform heating, as the end nearest the steam inlet heats quickest, and it is possible to have the heater at the start quite hot at one end, and cold at the other. An attempt to improve on this by running a perforated steam pipe on the inside of the heater tends to equalize the heat, but usually the area of the perforations is not considered, and the steam is not delivered uniformly from end to end.

All long heaters should be provided with three or four steam inlets suitably spaced to insure rapid and uniform distribution of the heat. Heaters are rarely provided with blow-offs on the upper side, for the release of the air when starting up; consequently air is trapped in the heater, and irregular curing results. The safest and best way is to provide a large exhaust, open it wide when steam is turned on, and, when the steam escapes in good volume, close it; this will relieve the heater quickly of air, and cause the steam to circulate rapidly and uniformly.

Steam with a large amount of water in suspension is not as hot as dry steam, and retards the cure, besides making the goods wet. It should be the aim, therefore, to cure goods in as dry steam as possible. There are three factors in the accomplishment of this end; namely, dry incoming steam, the rapidity of the circulation, and the quick discharge of the wet steam and condensation.

When steam is turned into a large heater, the condensation is very rapid; a fog forms and gradually condenses. This fog and the condensation should be discharged rapidly to equalize the heat so that the goods will be subjected to the same temperature for the same length of time; therefore it is necessary to open the discharge valve wide. No traps of any kind should be used at first. When the steam leaves the discharge pipe bluish in color, it indicates that the fog has been dispelled, and the discharge valves can then be throttled to permit the water to pass out freely; or at this stage of the curing, a good trap can be used to advantage, and will effect some economy.

In this connection the matter of piping is very important. Some introduce the steam at the bottom and some at the top; both methods have merit, but a combination of the two is preferable. Steam entering at the top only, does not rid the heater of air quickly. Steam entering at the bottom only, must pass through the fog, and is deprived of its heat and dryness. The best way is to have top and bottom inlets. Turning on the bottom inlets first will force the air out of heater at the top blow-off very rapidly. After heater is thoroughly freed of air, close the bottom inlets and open those on top. The fog being heavier than the dry steam entering from the top inlets, will settle at the bottom and be blown out. Frequently the steam before entering the heater passes through a steam separator, removing the entrained water, and greatly facilitating operations.

The proper piping of presses and distribution of steam in them is as important as in the case of heaters. The mains and supply lines should be ample, and in case of large belt and packing presses, there should be sufficient steam inlets to insure quick and uniform steam distribution. The steam space in a platen though small is nevertheless required to heat a large amount of metal and exposed surfaces. This causes rapid condensation and necessitates careful manipulation of the discharge to keep the platens free of water or wet steam. Unless this is attended to very carefully, the lower platens are apt to fill with water and cause the goods to be undercured on one side. As in the case of heaters, when first starting up a press, it is well to open the discharge valve wide, dispensing with a trap, after which the valve can be throttled or trap used.

The proper application and use of the thermometer also merits careful consideration. The bulb of the thermometer should not project inside of a heater, as it is apt to be struck and broken. It should be held in a special fitting, provided with a vent cock, which should be wide open when the heater is first started, and afterwards throttled so that just sufficient steam escapes to keep up a good circulation around the thermometer bulb. In place of the special fitting just mentioned, a nipple and tee can be used with the vent cock or valve screwed in the side outlet of the tee.

On presses, the thermometer being placed on the side, it is oftentimes impossible to screw them directly into the platen; hence it is necessary to use the special fitting just mentioned, manipulated in the same way. In many mills a nipple with a coupling is screwed into the top of the heater or side of the press, and the thermometer screwed into coupling; such a condition is a constant source of danger, since the thermometer cannot possibly indicate the true temperature, as the air pockets in the fitting, and steam cannot circulate freely around the bulb, causing the thermometer to read 10 or 20 degrees too low. Another matter of carelessness observable is the fact that thermometers are constantly used having the columns separated—that is, small particles of mercury being lodged in the tube above the main column and no attention is paid to these separations or allowance made for them. They however create a considerable error, and should be corrected as soon as observed. The best remedy is to use gas filled thermometers in which the mercury column can never separate. On long heaters it is desirable to have two or three thermometers in order to note the temperatures in different parts. A thermometer near the door (if it be the only one) is not well placed, because the radiation of heat by the uncovered door lowers the temperature. On long presses, it is equally desirable to have two or three thermometers on both the upper and lower platens.

Where pressure gages only are used for curing, it is not unusual to find no two gages indicating alike. This is easily accounted for, since it is known that Bourdon springs cannot retain their accuracy for any length of time, and require to be constantly tested and adjusted. Such gages are frequently ten points in error. A mercury pressure gage is the only form which is reliable. Steam control of a heater or press should always be done by temperature observation, as it is the heat that effects the cure, and experience has proven that the best results can be obtained when thermometers are employed.

When gages only are used on a press they are misleading, because, should the platens fill with water, the gage will not indicate the fact; but where thermometers are used such a condition can be quickly detected. Recording thermometers or gages are also desirable adjuncts to a heater as they give a record of the work done, and are a check upon carelessness.

As previously stated, the hand control of a heater or press is

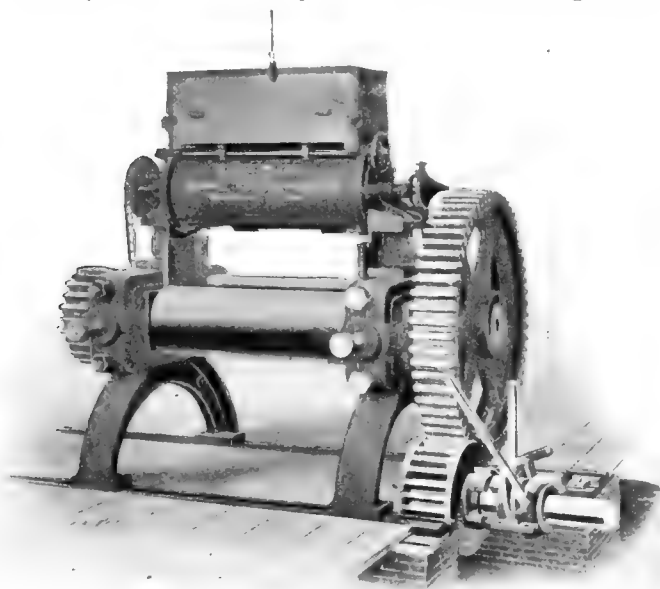
accomplished by throttling the steam valve. If the steam pressure on the lines were always uniform, the valve might be so nicely throttled that the temperature could be maintained without appreciable variation, but the steam pressures vary, and the throttling of the valve must be changed frequently to correspond, and the thermometer requires constant watching. With a careless man in charge, this means serious results, but even with the most careful men, the recording thermometer has shown that in most cases it is absolutely impossible to obtain uniform results by hand regulation, as the throttling of the valve cannot be changed with sufficient rapidity and accuracy.

On presses, however, such changes are not so apparent, as it takes some time to materially change the temperature of the iron mass.

RUBBER FACTORY APPLIANCES.

PEARCE AUTOMATIC MIXER AND FEEDER.

CARE in handling compound, and in incorporating it evenly and thoroughly, are vital to good mixing, and would seem to be perfectly attained in the device here shown. It consists primarily of a box, into which the compounding materials are weighed in the compound room. This is then carried to the mill that has been fitted with the automatic feeder, and placed in the square case at the top. The box has a sliding bottom



which when opened allows the compound to fall into the mixing cylinder below. In this cylinder is a mechanism that thoroughly stirs and mixes its contents. After this is done and when the rubber below on the rolls is ready to receive compound, a slide in the bottom of the cylinder is opened and the materials drop evenly between the rolls. The feed is so arranged that it may be regulated to suit any type of mixing, and is said to produce the most homogenous mixed sheet that could be desired. In addition to this there is the cleanliness of the method, a more uniform vulcanization, and a decreased shrinkage of the finished sheet. This mechanism can be attached to any type of mixing mills, with rolls of any dimensions. [Farrel Foundry and Machine Co., Ansonia, Connecticut.]

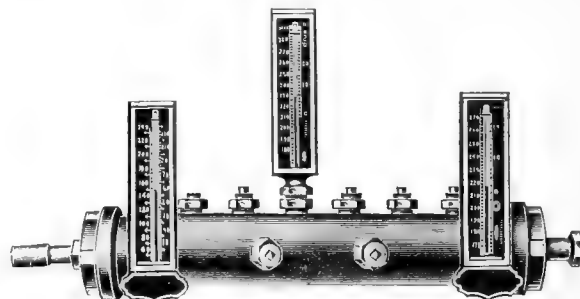
TESTING ACCURACY OF VALVE BALLS.

MOLDED rubber valve balls are usually shaped to fit the mold approximately and pressed twice in position 90 degrees apart in order to form them as nearly as possible into spher-

ical shape. The resulting balls, even under this plan of double molding, are not strictly spherical. It is always desirable to determine their accuracy of shape. Perhaps the simplest method of doing this is by applying the geometric truth that any section of a sphere is a circle. For this purpose a beveled edge ring, of less diameter than the ball to be tested, is laid on the sphere and moved over its entire surface. All inaccuracies may be plainly detected by inspecting the contact between the ring and surface, the observation being made by viewing the contact toward the light. In this way the extent and location of every deviation from a true sphere becomes apparent.

TESTING THERMOMETERS.

ALL thermometers, and particularly vulcanizing thermometers that are not "gas filled," are liable to derangements which result in faulty indications. They should therefore be tested frequently, to insure confidence in their indications. An excellent arrangement for this purpose is that shown in the accompanying illustration. It consists of a 3 or 4 inch wrought iron pipe, about 3 feet long, with capped ends provided with



steam inlet and outlet. There are a number of openings on the top and side to receive both straight and angle thermometers. The work of verifying any instrument whose readings are questioned is easily accomplished by comparison with a standard thermometer kept as a part of the apparatus. The range of test temperatures is readily controlled by the steam circulation.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values for March, 1904, and the first nine months of five fiscal years, beginning July 1, from the treasury department at Washington:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
March, 1904.....	\$ 71,031	\$ 45,422	\$ 209,802	\$ 326,255
July-February. ...	596,536	901,017	1,586,720	3,084,273
Total... ..	\$667,567	\$946,439	\$1,796,522	\$3,410,528
Total, 1902-03...	596,799	948,505	1,623,362	3,168,666
Total, 1901-02...	457,003	914,455	1,252,572	2,624,030
Total, 1900-01...	391,862	641,855	1,273,876	2,307,593
Total, 1899-00...	397,679	311,973	1,016,612	1,726,264

CUBAN IMPORTS OF RUBBER GOODS.

OFFICIAL statement of values, and of derivation of such imports, for the calendar year 1902:

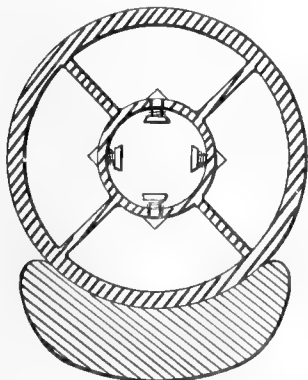
FROM—	Rubber Hose.	Rubber Footwear.	All other Rubber.	Total.
United States.....	\$6,786	\$4,413	\$62,416	\$73,615
Germany .....	....	904	14,623	15,527
Great Britain.....	62	....	21,515	21,577
France.....	8	....	7,306	7,314
Spain.....	27	....	20,810	20,837
Other Europe .....	....	15	2,984	2,999
All other.....	....	....	9	9
Total.....	\$6,883	\$5,332	\$129,663	\$141,878

NEW GOODS AND SPECIALTIES IN RUBBER.

DUPONT'S NEW PNEUMATIC TIRE.

A VERY ingenious and simple invention in the line of pneumatic tires is that shown in the accompanying illustration. It is, in brief, a tire with an inner tube.

Between the cover and the inner tube are a number of recesses or air pockets fitted with valves which are set in the walls of the inner tube. The main inflation valve (not shown in the illustration) passes through the rim and into the inner tube and furnishes the air supply. The secondary inflations are practically check valves of simple construction, so that in inflating the inner tube all of the air compartments are filled. The secondary valves, however, keep the air from leaking out, and as there is a multiplicity of these compartments, in case of puncture the tire does not flatten. [Joseph Dupont, No. 77 Stone street, Rochester, New York.]



THE "EVERSTICK" INVISIBLE RUBBERS.

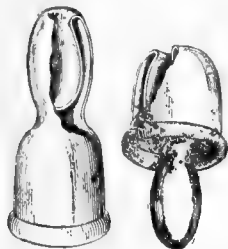
THIS is a new overshoe, which simply covers the sole of the leather shoe, but which is warranted to stay on, by reason of having a cord circling the entire shoe, that will not stretch. It clings tightly around the edge of the sole, and does not bind the foot in any way, though affording ample protection against wet or damp street pavements. It is practically invisible, and may be worn without injury to a patent leather shoe.



Though only recently introduced, the sale of these shoes is reported to have become large. A number of leading jobbers throughout the country have been named as agents for the owners of the United States patents, Adams & Ford, Cleveland, Ohio.

CUP END SAFETY NIPPLES.

THE nipple illustrated herewith is made of one piece of pure rubber. The idea of the "cup end" is to prevent collapsing, and by reason of the special construction the milk flows readily through the cup without jets and streams, which might cause strangling. Figure 1 shows a sectional view of the nipple. Another feature is that the nipple is easily reversible, which facilitates cleaning it. Figure 2 shows how the nipple is reversed, by drawing the large over the small end. Patented by Clarence A. Lindsay. [The M. Lindsay Rubber Manufacturing Co., New York and Washington.]



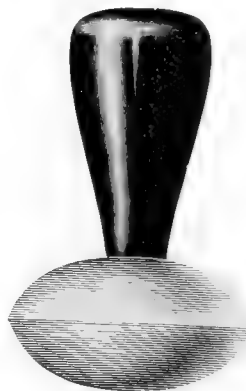
"CROWN" HARD RUBBER CORD ADJUSTER.

THIS simple device is easily placed upon an electric light or other similar cord without removal of the sockets thus obviating slipping, and preventing abrasion of the connections. It is reliable, easily adjusted, durable, and can be used with cords of different sizes. When the regular National Code or similar cord is used, it is passed through the larger end of the adjuster, as shown in the illustration; when used with small cord, the loop is passed through the smaller end first. These adjusters are being handled by supply dealers throughout the country, and are in extensive use in factories, mills, offices, and other buildings. The manufacturer offers to supply samples free on request. [J. H. Seaman, No. 175 Dearborn street, Chicago.]



A NEW DISTRIBUTING PAD.

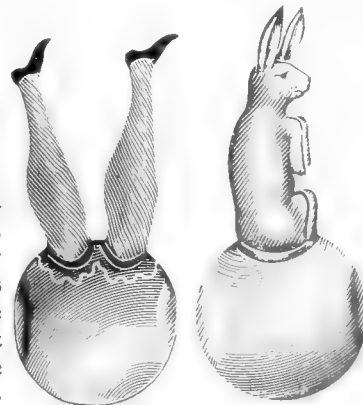
IN the lettering of canvas book covers old time book men used a leather pad stuffed with cotton, and an untidy, unsatisfactory makeshift it was. That is why the pad made of rubber for this work has proved so popular. The rubber part is of a special compound that is neither affected by the oil in the ink, nor the benzine in cleaning. It also saves a great deal of time to the worker, and is exceedingly durable. They are sold in sets of three, neatly boxed, for red, blue, and black inks. [The Mattson Rubber Co., No. 26 West Broadway, New York.]



MR. BAUMANN'S LEGS.

THE head of the Baumann Rubber Co. has a very marked faculty for producing little novelties that attract attention and command a ready sale. He has of late been devoting himself to a series of toys that are of the "tongue ball" order, and that are quite original. For example, that shown in the first illustration is apparently a small rubber ball which, upon pressure, suddenly shoots out a pair of legs that are a surprise to the observer. It is said that the inventor, or some one of his company, was advised that such a toy would not be approved of by a certain New Yorker by the name of Comstock. But that such a position would be absurd is evidenced by Mr. Baumann's retort.

"How can he stop it him?" he said. "Why don't he stop the wind to blow about those Flatiron building? Why not

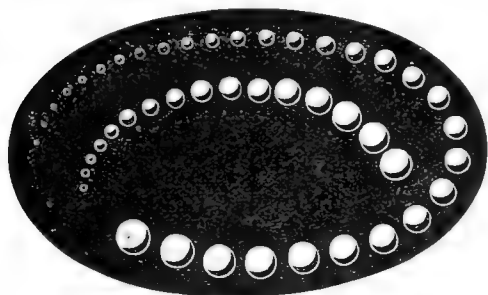


stop the beaches bathing adt? Why don't he stop those stage girls dancing with short skirts already? So he is able to stop those I stop showing my legs, ain't it?"

The sale therefore goes on and it is large.—Another surprise toy is a little rubber Easter egg out of which pops a rabbit, while still another, designed for sale at the St. Louis Exposition, is a rubber ball in which is concealed the head of an army mule. [The Baumann Rubber Co., New Haven, Conn.]

HARD RUBBER CATHETER SCALE.

THE illustration represents (in reduced size) a hard rubber Catheter Scale, the exact dimensions of which are $5\frac{1}{2} \times 3\frac{1}{4}$

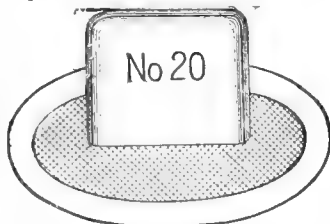


inches. The perforations, of course, are relatively larger in the full sized gage. One feature not shown in the illustration is the series of figures, indicating di-

ameters according to the English and French scales of measurement. These gages may be obtained with the imprint of any firm desiring to market them. [Hanover Rubber Co., Limited—George Borgfeldt & Co., American agents, New York.]

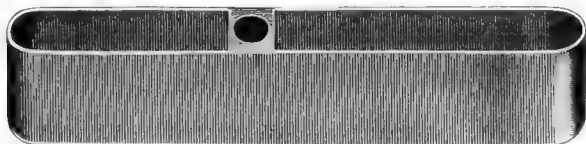
TIRE REPAIR PLUG WITH OBLONG STEM.

THE Cox improved plug, which is illustrated herewith, is recommended as a certain cure for punctured or cut single tube or double tube tires. The stem is made oblong, in order that it may be cut to fit all kinds of cuts and punctures. The inner surface of the head is corrugated, in order that it may not expel the cement between the wall of the tire and the head of the plug. The stem fills up the cut or puncture, holding the patch firmly in place. United States patent No. 733,014, issued July 7, 1903, to David H. Cox, Jr. [Cox & Spencer, Rahway, New Jersey.]



RUBBER COVERS FOR TUNING PINS.

It is said that the average piano needs tuning as often as once in three months. The reason for this is the unprotected



steel pins known as "tuning pins." To protect them there has been invented a neat rubber coverlet such as is shown in the accompanying illustration. This fits over each row of pins, being socketed to one of them, and effectually insulates the pins from heat, cold, or dampness. It is said that these coverlets have been known to keep the original tone of a piano up for as long as three years. It is estimated that there are about 4,000,000 pianos in the United States at the present time, and that the annual sale is for about 125,000 instruments. There are some, no doubt, who would claim that all of the above instruments are out of tune. Experts, however, figure that 80 per cent. of those in use are in that state, and without knowing

it need the rubber coverlets. It would seem as if this were a new and fertile field for a large and profitable business in preventing rather than curing instrumental vagaries. [George R. Percy, No. 25 Pine street, New York.]

EVANS VACUUM CAP, FOR FAILING HAIR.

THIS device is based upon the theory that loss of hair is due to impeded circulation of blood in the scalp, and is to be remedied only by stimulating the circulation, and thus supplying the natural food for hair growth. The invention is the result of attempts to stimulate circulation without the irritation caused by massage, blistering, and other methods practiced in the past. The central idea of the device is the production of a vacuum over the scalp, for which purpose is used a nickel-plated helmet, lined with a rubber diaphragm, which, when properly adjusted, fits airtight on the head, the diaphragm covering the upper portion of the forehead, and resting above the ears. The helmet is suspended from a rod attached to the back of a chair, enabling the occupant to adjust it conveniently to the head. To the seat of the chair, and within easy reach, is an exhaust pump, which, when connected to the helmet and put in operation, creates a vacuum above the head, drawing the blood to the scalp, and gradually, under daily use, improving the circulation. An ordinary chair can be used. [Evans Vacuum Cap Co., Fullerton building, St. Louis.]



QUICK VULCANIZING DENTAL GUM.

THE usual practice in the handling of dental gum for the manufacture of tooth plates by the thousands of dentists who today do such work is—that is, as far as vulcanizing goes—to take about half an hour in getting the heat up to the required temperature, then to hold it there from an hour to an hour and a half. The time varies somewhat according to the type of vulcanizer used and the compounds employed. When the cure is finished the vulcanizer is cooled down gradually, as too quick cooling would fracture the teeth. Directly in this connection THE INDIA RUBBER WORLD is advised that a new quick vulcanizing dental rubber has been invented which reduces the time to 15 minutes, the temperature being 320° F. These rubbers are said to be made in all colors, including pink; are described as lighter in weight, stronger, and very easily handled by the dentists. The formulas have been prepared by Arthur C. Squires, of Akron, Ohio, and the goods are to be made by the Akron Dental Rubber Co., the incorporation of which was noted in the last issue of this Journal.

MONEY AT PARA.—For want of small change, tram tickets are circulating as money at Belem [Pará], although there seem to be lots of nickel in the local treasury, waiting, we suppose, for a good fire to help put it into circulation. The *Journal* says that small change is "badly wanted in the rubber districts," though what use it can be in places where an egg costs 1\$ and a chicken 20\$ apiece is hard to say.—*Brazilian Review*.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED APRIL 5, 1904.

- N**O. 756,222. Brush [for scrubbing]. W. W. Evans, Salt Lake City, Utah.
- 756,350. Hose mender. F. A. Garbutt, Los Angeles, Calif.
- 756,376. Fountain pen [feed for]. F. M. Kegrize, Philadelphia.
- 756,472. Wheel [with resilient tire]. J. Carpenter, Brooklyn, N. Y.
- 756,515. Lever for manipulating the covers of pneumatic tires. E. Michelin, Clermont-Ferrand, France.
- 756,517. Siphon. C. Miller, Sunflower, Pa.
- 756,536. Safety tire. A. F. Sherwood, Peekskill, N. Y.
- 756,544. Surgical or obstetrical sheet. W. W. Townsend, Rutland, Vt., assignor of three fourths to W. N. Knowlton, Melrose, Mass.
- 756,546. Combined hydrometer and syringe. R. Van Benthuyzen, Newark, N. J.
- 756,717. Hose drier [for fire department use]. H. J. Schools, Lebanon, Pa. [Illustrated on another page of this issue.]
- 756,770. Bottle closure. E. E. Adams, New York city.
- 756,778. Self filling fountain pen. R. Conklin, Toledo, Ohio.

ISSUED APRIL 12, 1904.

- 756,842. Device for removing water from the hair. Fannie S. Emmons, Richmond, Ind.
- 756,998. Brush [with rubber cushioned head]. G. A. Vickery, Lexington, Mass.
- 757,024. Marking and lettering pen. C. C. Clement, Boston.
- 757,148. Scouring machine for woven fabrics. J. Schweiter, Horgen, Switzerland.
- 757,157. Atomizer. C. L. Turner, Winthrop, Mass., assignor to Davidson Rubber Co., Boston.
- 757,199. Vehicle tire. M. A. Kennady, assignor to Tredair Rubber Co., both of Boston.
- 757,241. Hair curler. N. B. Stone, Outlook, Wash.
- 757,247. Toy [hollow ball, designed to open as a parachute]. G. J. Altermatt, Philadelphia.
- 757,361. Process of rendering leather durable and waterproof. [Leather for shoe uppers is treated on the inner side with rubber solution, then rubbed with talcum powder.] F. Stoffer, Hamburg, Germany.

Trade Mark.

- 42,365. Rubber boots and shoes. Goodyear Rubber Co., St. Paul, Minn. *Essential feature.*—The representation of two elephants harnessed to a boot and pulling in opposite directions. Used since January, 1902.

ISSUED APRIL 19, 1904.

- 757,447. Rocking chair with air apparatus. M. Friedland, Kansas City, Mo.
- 757,468. Brake handle [for motor cars]. C. J. Keplinger, Canton, Ohio, assignor to Canton Hard Rubber Co.
- 757,500. Fountain pen. W. R. Rothwell, Philadelphia.
- 757,543. Fountain pen. M. R. Crossman, Boston.
- 757,600. Golf ball. T. C. Crawford, London, England.
- 757,628. Fountain brush. A. B. Landreth, Bristol, Pa.
- 757,631. Vehicle tire filler. C. B. Nirdlinger, St. Louis, Mo.
- 757,654. Syringe. H. M. Guild, Erie, Pa.; N. J. Maxwell, executor of said Guild, assignor to C. A. Tyrrell, New York city.
- 757,664. Fountain pen. F. M. Kegrize, Philadelphia.
- 757,709. Exercising apparatus [including a punching bag]. G. Yoerger, Brooklyn, New York.
- 757,752. Hose coupling. F. W. Killen, Wilmerding, Pa.
- 757,791. Bath spray. V. C. Vant Woud, New York city.
- 757,831. Floor or like brush. F. Neidenbach, assignor of one half to K. Zellner, Fiume, Austria-Hungary.
- 757,877. Hose [with textile layers of special construction]. F. B. Bosch, Philadelphia.
- 757,907. Tooth brush with washing device [comprising rubber bulbs]. F. Fritz, Trieste, Austria.
- 757,923. Vehicle tire [cushion type]. A. C. Hills, London, England.
- 757,929. Hose, rod, or pipe coupling. A. W. Huhsmann, Staunton, Ill.

Trade Marks.

- 42,424. Fountain pens. F. C. Brown, New York city. *Essential feature.*—The word "Just." Used since Jan. 25, 1904.

- 42,454. Rubber hose and cotton hose. Bowers Rubber Co., San Francisco. *Essential feature.*—The words "Short Horn." Used since June, 1902.
- 42,455. Rubber hose and cotton hose. Bowers Rubber Co. *Essential feature.*—The word "Owl." Used since June, 1902.
- 42,456. Rubber hose and cotton hose. Bowers Rubber Co. *Essential feature.*—The representation of the head of a short horn bull. Used since June, 1902.
- 42,457. Rubber hose and cotton hose. Bowers Rubber Co. *Essential feature.*—The representation of an owl. Used since June, 1902.

ISSUED APRIL 26, 1904.

- 758,054. Flexible drop light tubing for gas lamps and burners. W. S. Edwards, Chicago.
- 758,058. Tire inflator. F. H. Geisler, Dayton, Ohio.
- 758,063. Brush. C. Gruneberg, Pozsony (Pressburg), Austria.
- 758,099. Hose connection. F. H. Paradise, Denver, Colo.
- 758,155. Hose coupling. G. Stroh, Detroit, Mich.
- 758,168. Hose drier [for fire departments]. C. M. Bowman, Lebanon, Pa.
- 758,185. Storm curtain for vehicles. D. C. Lawless, Toledo, Ohio.
- 758,209. Tire. A. Hendey, Jerome, Ariz.
- 758,336. Pneumatic tire cover. G. T. Shilton and A. Schultze, Westland, New Zealand.
- 758,435. Elastic fabric. H. J. Gaisman, New York city.
- 758,516. Air pump. J. E. Fisher, New York city.
- 758,604. Air cushion for cars. M. Downer, Chicago.

Trade Marks.

- 42,470. Rubber boots, shoes, and sandals. Bentley & Olmsted Co., Des Moines, Iowa. *Essential feature.*—The representation of a diamond shaped figure within a like figure of larger size, and of two stars within the smaller figure. Used since March 20, 1903.
- 42,471. Rubber belting. Gorham Rubber Co., San Francisco. *Essential feature.*—The word "Amazon." Used since Jan. 1, 1900.
- 42,472. Rubber packing. Gorham Rubber Co. *Essential feature.*—The word "Fearless." Used since Jan. 1, 1900.
- 42,473. Rubber packing. Gorham Rubber Co. *Essential feature.*—The word "King." Used since Jan. 1, 1900.
- 42,474. Rubber packing. Gorham Rubber Co. *Essential feature.*—The word "Queen." Used since Jan. 1, 1900.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1904.

[* Denotes Applications from the United States.]

- 6,270. A. F. N. Powell, Liverpool. Pneumatic tire. Mar. 15.
- 6,291. B. C. Webster, London. Detachable heel for boots. Mar. 15.
- 6,324. J. Lucking, London. Heel pad. (G. Pabst, Germany). Mar. 15.
- 6,329. C. Durand, London. Armored pneumatic tire. Mar. 15.
- 6,471. Robinson Brothers, Limited, and G. A. L. Clift, Wolverhampton. Preparation of rubber solution and subsequent treatment for the conversion of waste into serviceable rubber. Mar. 17.
- 6,490. F. Olai, Aston. Tire pump. Mar. 17.
- 6,509. Marianne C. Bickmore, Oxford. Pneumatic tire. Mar. 17.
- 6,514. L. Azulay, London. Tire fabric, Mar. 17.
- 6,519. Annie C. Burkin, Nottingham. Pneumatic tire. Mar. 17.
- 6,538. J. R. Taylor, London. Pneumatic tire. Mar. 17.
- 6,549. J. F. De Savignac, London. Pneumatic tire. Mar. 18.
- 6,744. R. S. McLaren, London. Pneumatic tire. Mar. 19.
- 6,844. F. R. Wilkins, London. Hot water bottle. Mar. 21.
- 6,895. J. Greenwood and H. James, Sheffield. Heel protector. Mar. 22.
- 6,947. J. and F. N. Ashworth, London. Manufacture of covered elastic cords. Mar. 22.
- 6,991. J. B. Brooks and J. Holt, Birmingham. Hot water bottle fittings. Mar. 23.
- 7,024. A. Cruickshank, London. Revolving heel. Mar. 22.
- 7,161. G. Pilkington, Birmingham. Non skidding pneumatic tire. Mar. 25.
- 7,171. G. H. Winter, Bristol. Non skidding band for tires. Mar. 25.
- 7,172. T. F. Wiley, Bradford. Apparatus for waterproofing fabric. Mar. 25.

- 7,205. C. Mozt, London. Elastic tire for vehicles. Mar. 25.
 7,213. A. E. Lockyer, London. Waterproof aprons for motor cars. Mar. 25.
 7,230. R. R. Gubbins, London. Prevention of puncture and side slipping tires. Mar. 25.
 7,235. J. R. Van Winkle, London. Boot sole. Mar. 25.
 7,240. H. J. Haddan, London. Means of attaching tire covers. (B. Polack, Germany.) Mar. 25.
 7,242. Emma M. Aulton, Wolverhampton. Deflator for rubber valves. Mar. 26.
 7,357. E. C. F. Otto, London. Elastic tire for motors. Mar. 28.
 * 7,468. F. M. Kegrize, London. Fountain pen. Mar. 29.
 7,475. M. and W. H. Stables, trading as William Eyres & Sons, London. Waterproof fabrics. Mar. 29.
 7,510. W. E. Kimber, Liverpool. Tire inflating pump. Mar. 29.
 7,697. W. Hockley, London. Beer pipe. Mar. 31.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MARCH 30, 1904.]

- 25,822 (1902). Puncture proof inner tube for tires. A. J. Boulton, London (G. F. Brown, New South Wales).
 25,872 (1902). Pneumatic wheel for vehicles. P. Weir, Redland, Bristol.
 25,951 (1902). Resilient tire for vehicles. W. Balassa, Vienna, Austria.
 26,058 (1902). Hand stamp for receipting bills. L. Greimer Voigt, Winterthur, Switzerland.
 26,074 (1902). Revolving heel. T. Moore, Grantham, Lincolnshire.
 26,155 (1902). Golf ball. W. Hillman, Coventry.
 26,182 (1902). Pneumatic tire [having covers with stiffened edges]. Christian H. Gray and T. Sloper, Silvertown.
 26,183 (1902). Fabric for tires. *Same*.
 26,212 (1902). Single tube tire [dovetailed into the felly]. E. H. Seddon, Brooklands, Cheshire.
 26,256 (1902). Pneumatic tire. C. Bürger, Chene Bougeries, Switzerland.
 * 26,259 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.
 26,268 (1902). Pneumatic tire. [Prevention of puncture in the air tube.] G. Tupinier and Baron R. P. de Sennevoy, Paris.
 26,370 (1902). Pneumatic tire [with special fabric]. J. A. Mays, Hampstead, Middlesex.
 26,457 (1902). Pneumatic tire [with metal links to prevent slipping]. S. Butler, Westbury-on-Trym.
 26,524 (1902). Waterproof garment. B. Birnbaum & Sons and H. B. Birnbaum, London.
 26,561 (1902). Boot sole. P. Castets, Paris.

[ABSTRACTED IN THE OFFICIAL JOURNAL, APRIL 7, 1904.]

- 26,576 (1902). Hoof pad. F. Symons, Burwood, New South Wales.
 * 26,597 (1902). Cushion tire. W. O. Worth, Chicago, Illinois.
 26,650 (1902). Non slipping tire. M. Vivian, Chiswick.
 26,730 (1902). Pneumatic tire [with means to prevent creeping]. S. T. Richardson and R. Price, Birmingham.
 26,745 (1902). Pneumatic tire [with means to prevent puncture of inner tube]. R. Smith, Tottenham.
 26,797 (1902). Boot heel. J. Lucking, London. (G. Pabst, Hamburg, Germany.)
 26,814 (1902). Non slipping pneumatic tire. E. A. Stretton, Cheltenham.
 27,098 (1902). Cupping appliance. Société Pharmacie Centrale de France, Paris.
 * 27,135 (1902). Dress shield. H. H. Lake, London. (Canfield Rubber Co., Bridgeport, Connecticut.)
 27,217 (1902). Golf ball. C. H. Gray, Silvertown.
 27,224 (1902). Solid tire. E. Cushing, Dorking.
 27,323 (1902). Pneumatic tire. T. Clarke and J. Harvey, Manchester.

[ABSTRACTED IN THE OFFICIAL JOURNAL, APRIL 13, 1904.]

- 27,358 (1902). Dress shield. M. Maguire, Windsor.
 27,362 (1902). Dress shield. Société Veuve A. Fayaud fils et gendre, Paris.
 27,550 (1902). Pneumatic tire. B. Nadall, Kingston-on-Thames.
 27,642 (1902). Boot heel. A. Briggs, Leicester.
 27,714 (1902). Spray producer. Société Pharmacie Centrale de France, Paris.
 27,798 (1902). Pneumatic tire [with flexible woven metallic lining]. A. E. Schurr, Woking, Surrey.

- 27,811 (1902). Piston packing. J. Ashworth, Dalton-in-Furness, Lancashire.
 27,878 (1902). Apparatus for molding golf balls and the like. P. Dick, Edinburgh.
 27,951 (1902). Pneumatic tire [with metallic means for preventing puncture]. P. and C. McCullouch, Fort William, Inverness-shire.
 27,971 (1902). Pneumatic tire. C. Boidot, London.
 * 27,989 (1902). Golf ball. E. Kempshall, Boston, Massachusetts.

GERMAN EMPIRE.

PATENTS GRANTED.

- 154,245 (Class 63c). Manufacture of closed end tubes for pneumatic tires. C. Stoeckicht, Frankfurt a/M. Mar. 23.
 151,700 (Cl. 63c). Protective tread for pneumatic tires, consisting of metal segments. Marie Manuel, Milhausen. Apr. 7.
 151,777 (Cl. 63c). Tires having air chamber in sections. Charles Miller, Binghamton, New York. Apr. 13.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 219,409 (Class 39a). Apparatus for the production of tubing from elastic material. J. Seibt & Becker, Berlin. Mar. 23.
 219,410 (Cl. 39a). Apparatus for the production of tubing from elastic material. *Same*. Mar. 23.
 220,512 (Cl. 3b). Back piece for suspenders, consisting of rubber cords. Frau J. G. Hauße, Pulsnitz. Apr. 7.
 220,449 (Cl. 39a). Fastening device for rubber plating molds. Zeiger u. Wiegand, Leipzig. Apr. 7.
 220,497 (Cl. 47d). Belting covered with rubber on the running side only. Wilhelm Wiegand, Dortmund. Apr. 7.
 220,843 (Cl. 3b). Lady's jacket and skirt, made of rubber covered textile. W. Dresel, Berlin. Apr. 13.
 280,850 (Cl. 3b). Clothing having in various places elastic inserts. J. A. Scriven, New York. Apr. 13.
 220,903 (Cl. 20h). Elastic skid shoe. A. Halfmann, St. Johann a/Saar. Apr. 13.
 220,947 (Cl. 64b). Pipe cleaning bell of rubber, for steam or water pipes. J. Schatz, Crefeld. Apr. 13.

APPLICATIONS.

- 31,946 (Class 30d). Air cushions with adhesive covers adapted to be sewn on the edges. C. T. Hoffmann, Berlin. Mar. 23.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATE OF APPLICATION).

- 337,468 (Nov. 9, 1903). Couverchel and Billet. Non slipping pneumatic tire cover.
 337,474 (Nov. 11, 1903). J. E. Schmidt. Detachable rubber flange.
 337,488 (Nov. 28, 1903). E. Midgley. Improved tread for pneumatic tires.
 337,521 (Dec. 8, 1903). G. de Knyff. Detachable non slipping tread for vehicle tires.
 337,538 (Dec. 9, 1903). J. M. Piquera. Extensible system of molds for the manufacture of tire covers.
 337,554 (Dec. 10, 1903). A. Pillard. Non slipping protector with metallic lining, for vehicle tires.
 337,663 (Dec. 2, 1903). G. des Michels. New process for manufacture of rubber tubes.
 337,707 (Dec. 9, 1903). S. Butler. Pneumatic tire and rim therefor.
 337,741 (Dec. 15, 1903). C. Beau. Non slipping reinforced band for pneumatic tires.
 337,799 (Dec. 16, 1903). H. Harmel. Manufacture of outer covers for pneumatic tires.
 337,805 (Dec. 16, 1903). A. Tardy. Elastic tire.
 338,867 (Dec. 19, 1903). Pease & Schumacher. Tire and rim for vehicle wheels.
 337,955 (Dec. 22, 1903). W. Maybach. Rubber tire.
 338,048 (Oct. 16, 1903). M. Pontio. Reclamation of rubber.
 338,054 (Oct. 16, 1903). Couval. Anti-slipping device for rubber tires.
 338,081 (Nov. 6, 1903). E. Lacouture. Pneumatic tire and mode of fastening same.
 338,129 (Dec. 26, 1903). E. Simoneton. Anti-slipping pneumatic tire.

[NOTE.—Printed copies of specifications of French patents may be ordered from R. Bobet, consulting engineer, 16, avenue de Villiers, Paris, at 50 cents each, post-paid.]

RUBBER GOODS IN MAIL ORDER TRADE.

BY OUR CHICAGO CORRESPONDENT.

THE great volume of business done by the "mail order" houses of Chicago is realized by few people who are not engaged in it. Chicago is the natural mail order center of this country and of the world, not only because of its location geographically but because it was here that the first of the great mail order houses started in the business of issuing to the trade a catalogue which gave the countryman a price list—which was as low and in many instances a little lower than the home merchant could sell—and utilized the mails instead of salesmen to bring in the orders.

How successful this plan of merchandising has been is shown by the volume of business done by these houses in Chicago last year. One house, I am reliably informed, did a business in excess of \$15,000,000 last year and it is even estimated as high as \$25,000,000. There is another mail order house which does almost as much, if not an equal volume of mail order business. It is possible that the mail order houses of Sears, Roebuck & Co. and Montgomery Ward & Co. do a business amounting to \$50,000,000 a year—a volume equal to that of Chicago's greatest wholesale and retail mercantile establishment, Marshall Field & Co. During December last Sears, Roebuck & Co. did a business amounting to \$3,000,000.

In this immense volume of sales rubber goods of various kinds and description played an important part. Such goods are fast taking a prominent place in the catalogues sent out by these mail order concerns. These two houses alone sold upwards of \$1,200,000 worth of rubber goods during 1903, and they count on increasing that volume of business this year to \$1,500,000 at least.

One of these houses distributed to the mail order trade last year, I am told, more than 2,000,000 feet of garden hose. This exceeds the amount of that class of rubber goods handled by one of the largest hardware concerns of the country. Of course the greater part of this 2,000,000 feet of garden hose is of the cheaper quality, and hence does not run into money as fast as would the better grades, but it indicates the quantity of business that these mail order concerns are doing.

Sears, Roebuck & Co. two or three seasons ago distributed 90,000 bicycles. This means that they sold 180,000 bicycle tires on new wheels alone, not taking into consideration the number of single tires and sets shipped by them on mail orders without the wheels. This business has fallen off, however, and it is probable that last year this same concern did not distribute in excess of 100,000 bicycle tires all told, but the increase in the volume of rubber shoes and other rubber goods has more than offset this loss.

If this house handled anywhere near as much garden hose as did Montgomery Ward & Co. during the last year, the 4,000,000 feet distributed would indicate in a measure the volume of business in other lines of rubber goods. And this in face of the fact that, in the central part of this country, last season and the summer preceding it were exceedingly poor ones for the dealer in garden hose, because the two seasons were exceedingly rainy ones and afforded little use for such an article.

An effort was made to secure from the heads of these two large mail order concerns statements as to the value of the rubber goods sold by each last year, and how these sales were divided among the different classes of goods. The management of these houses, however, jealously guard details against disclosure to the trade or the public. Both President R. W. Sears of Sears, Roebuck & Co., and Vice President W. C. Thorne of Montgomery Ward & Co., gave an estimate of the

total value of the rubber goods distributed by their respective concerns. Mr. Sears said that his concern handled in the neighborhood of \$700,000 worth of all kinds of rubber goods, while Mr. Thorne placed the output of his concern at \$500,000. From the best information at hand it is safe to say that the sales of rubber and combination footwear in each of these establishments amounts to between \$300,000 and \$400,000. This estimate is gathered from jobbers.

But there are other mail order concerns which do quite a business in rubber goods. For instance there is the Mead Cycle Co., which was the first to undertake to establish a foreign branch. This concern, like the two general mail order houses mentioned, had a modest beginning. It grew to be the largest of its kind in the country and when the bicycle demand began to fall off in this country it sought a foreign market for its goods. It distributed between 60,000 and 70,000 pairs of bicycle tires last year according to information given by a tire manufacturer.

This concern is going to set the pace for "all-comers" this year by offering to sell automobiles on the mail order plan. Many dealers and manufacturers shake their head dubiously at this, and prophesy failure in this because, they say that people who buy an automobile will want to inspect the machine before putting as much money into it as the cheapest machine now costs. But it will be remembered that at the time this concern established a branch in Europe and sought a foreign market for bicycles, competing with European factories, there were many doubting Thomases.

While there is a prejudice in the minds of many dealers and manufacturers against the mail order houses, growing out of the fact that their business cuts into that of the small retailers throughout the country, there is also a lesson in their rapid growth which might be of great value. These concerns depend largely upon advertising to sell their goods. It is the publicity given through the purchase of space in various periodicals that has brought the fact to the prospective patron that the mail order house can compete with local merchants and offer goods with a guaranty.

The guaranty is this: To refund the money in full, to return the deposit, and to forward transportation charges whenever a customer is dissatisfied and does not want to keep the goods sent him. Whether the customer has good cause or not is immaterial; if he does not want the goods after inspection, the concern shipping it pays the freight both ways and pockets the loss.

What is the result? That man or woman who allowed it to be returned has received an impression as to the reliability of that mail order concern which is worth more to it than the cost of the freight both ways.

Sears, Roebuck & Co. expend fully \$500,000 a year in newspaper and periodical advertising, not to mention the cost of their large catalogues, which runs considerably more than \$1 apiece in the large quantities which they produce them. It is presumed that the other large concerns expend as much. The result is that one of these concerns recently received in one day 25,000 pieces of mail through the Chicago postoffice.

Mr. Sears, who directs the advertising of his concern and passes upon every "ad" that is put out, says that when he places an advertisement in a periodical he does it for the purpose of reaching those who have never had any dealings with his concern. His motto is "to keep everlastingly after new business."

"It is the constant, careful, methodical watching of results from every small investment in advertisements that assure the success in the aggregate," said he. "It is the fellow with the

second wind who wins the race. Many advertisers get 'cold feet' just about the time success would begin to come their way. When we advertise we are satisfied with the returns which the average advertiser would consider a losing venture. We depend upon the ultimate results, the satisfied customer, his permanent trade and the trade of his friends to make our advertisement pay."

This man started in business with a capital of less than \$1000 twelve years ago. It is said that his house now has 2,000,000 live accounts. This trade has grown from the first customer received through an advertisement, to the present volume, stated above.

F. M. H.

THE DEMAND FOR RUBBER HOOF PADS.

THE condition of the streets in New York during much of the past winter, due to the ice and snow—the latter of which froze and could not be removed promptly—was particularly trying on horses. A reporter for THE INDIA RUBBER WORLD who made some inquiries in regard to the comparative merits of asphalt and granite pavements, under such conditions, and also the advantages from the use of rubber horseshoe pads encountered a variety of opinions.

"I have been driving in New York for twelve years," said the teamster on a big express van, "and I don't find so very much difference between asphalt and other streets. When the street is slippery, from mud or snow and ice, and the horses' shoes are worn smooth, there is always trouble. Of course on a level street and a dry street asphalt is the best, because the load pulls so much easier, and horses are not likely to fall except when they are pulling. When a horse is rough shod I think he stands as good a chance on asphalt as on one of these downtown granite streets. When the tops of the blocks get round, edged from wear, spikes on the shoes nor nothing else will hold on them. Then some horses will stand up where others will fall. These big footed heavy horses used in big trucks fall down much easier than lighter horses with smaller feet. I can't say anything about rubber pads, for we never use them. I don't see how they could be much good on big horses; they would wear smooth so soon from the weight and pull."

The driver of a fire engine, in that section uptown where steep inclines are the rule, said: "The fire department doesn't have a great amount of trouble whether we have to make a run on asphalt or granite. The reason is because our horses are always carefully shod, spikes being put on as soon as the weather is slippery, and because our horses are educated and know how to keep their feet. I have known just about as many engine horses to fall when it was not particularly slippery as when it was. A sudden turn or a twist to pass something will throw a horse, because he isn't looking for it, when he will not fall on a street that he knows is slippery. Green horses fall twice as often as trained ones. I have seen the rubber horseshoe pads used, and I think they are good things. They certainly must take a considerable jar off a horse when he is going on the run—and that's the way we drive—and when the shoes are new they hold the horse up just like a new rubber shoe does a man."

The keeper of a large stable where carriages and light traps are kept for hire, had this to say: "We do not have much trouble with our horses falling, either on asphalt or granite but if the weather is very slippery we do not send horses out unless they have spikes on their shoes, at least behind. The rubber shoes are a good thing but are expensive. We use them sometimes on our roadsters and fancy horses. We can afford to put them on horses that do not go out very often

and when they do are at high rates. We couldn't afford to put them on ordinary carriage and cab horses, that are out half a dozen times every twenty-four hours. But I think it pays for good horses, because the rubber shoe is undoubtedly an advantage and I think it is good economy to take the very best sort of care of a good horse. A bad foot, or a split hoof or a fall on account of improper shoeing, will cost a man more than the extra expense of rubber pads. I use some rubber shoes, but as to the kind, that depends upon the horse."

Speaking of the sale of rubber horseshoes and hoof pads, one of the largest dealers in blacksmiths' supplies in New York said that there seemed to be a steady increase every year. "Last year we sold probably 20 per cent. more pads than the year before. We handle about fifty varieties, and I could not say that any one type was more popular than the others. They are mostly used for carriage horses and light hauling. For the heavy draft horses they are not much sold, although more are being used in that direction now than ever before. They are a great thing to prevent falling on slippery streets, and by being changed and reset can be made to wear for five or six weeks, I would say, however, that a month is about the average wear for a shoe on a carriage horse."

The manager of one of the principal hoof pad companies declared that the sale of his product for the past year was at least 40 per cent. greater than for any previous year. More people seemed to be using rubber as a foot covering for horses and the use was spreading into smaller cities. "There is no doubt," said he, "about the use of the pad being an increased demand for rubber. This is not only true on account of the increased number sold but also because experience has taught that a paying pad cannot be placed on the market unless plenty of good rubber is used. There have been very many cheap pads made and almost every man who has tried it has either gone out of business or gone broke. A pad made of good rubber and properly constructed is a good thing but it is not cheap."

The manager of a company selling rubber horseshoes said: "I think it safe to say that four times as many horses are wearing rubber pads and shoes as was the case five years ago. Our rubber shoe is not a pad, and it came in after the pad had become well known, but we sold last year in the eastern territory alone more than 100,000 pairs. The fact is that our orders have been ahead of our capacity to fill them. I understand that the same has been largely true with the pad people. People are beginning to recognize that in spite of the fact that a pair of good shoes or pads cost from \$1.15 up it is true economy to buy them. Of course they are sold mostly for icy streets in winter but many concerns use rubber on their horses feet for seven months in the year. We export quite a number of rubber shoes to Havana, where there is never any ice. They have asphalt streets there and the moisture and mud make them slippery. The large cities are of course the principal buyers, but small places are becoming interested and even some well to do farmers are having their good horses protected. Carriage and cab horses are the chief users, and light delivery wagons. Some sort of protection is almost indispensable for the milkman, for instance, for early in the morning the streets are much more slippery than at other times and the early delivery of milk is a necessity."

RUBBER TILING.—The new courthouse at Syracuse, New York, is to be floored with rubber tiling, instead of marble, as at first contracted for. A member of the building committee stated that he had seen rubber tiling after long use in public buildings, and that it showed no effects of wear, while marble in the same circumstances was deeply worn.

NEWS OF THE AMERICAN RUBBER TRADE.

IMPERIAL RUBBER CO. (BEACH CITY, OHIO)

THE Canton Hard Rubber Co. have removed from Canton to Beach City, Ohio, and absorbed the concern known as the Tuscarora Rubber Co., at the latter place. The combined business is to be incorporated as the Imperial Rubber Co., with \$100,000 capital, and the output is intended to embrace a full line of soft rubber goods—surgical supplies, bicycle and carriage tires, matting, tubing, hose, etc.—in addition to rubber covered harness mountings which have been the specialty of the Canton Hard Rubber Co. The latter company was incorporated May 17, 1899, with \$50,000 capital. Claude J. Keplinger, secretary and manager, reported recently that the company expected to be at work in the new location by June 1.

IMPROVEMENTS AT THE CANDEE FACTORY.

THE rubber shoe factory of the L. Candee & Co. (New Haven, Connecticut) was closed on the last day of March, not only for the annual repairs and stock taking, but to allow of alterations and improvements to an important extent. There has recently been installed a 180 HP. General Electric motor to replace the 150 HP. George H. Corliss engine previously used to drive machinery in the rubber wash cellar and carpenter and machine shops. There have now been installed two Westinghouse tandem compound Corliss engines, rated at 1400 HP., with a maximum of about 2700 HP., to replace two George H. Corliss engines of 1100 rated HP. The entire plant will be run condensing instead of noncondensing as heretofore, which has been accomplished by securing rights to lay 1400 feet of 20 inch pipe to Mill river. To operate a Bulkley injector condenser the company have erected a pumping station opposite their mill on East street, with a Worthington centrifugal pump driven by a 65 HP. motor. It is expected that upon completing these plans a material increase of efficiency will be secured. Work has been pushed night and day, and it is hoped to resume manufacturing about the middle of June.

TRENTON RUBBER MANUFACTURING CO. IN CHICAGO.

THE Trenton Rubber Manufacturing Co. (Trenton, New Jersey) have removed their Chicago warehouse and offices from No. 20 South Canal street to No. 183 Lake street, making the seventh mechanical rubber goods house on one block. The new store is fitted up in the most improved manner for the accommodation of the large stock of belting, packing, and hose which the company are forced to carry to meet the demands for their increasing business in the West. Mr. F. B. McIlroy, the manager, who opened the Chicago branch a little more than three years ago, visits personally the trade throughout the West as far as the Pacific coast, and from British Columbia to the City of Mexico.

NEW RUBBER SUNDRIES FACTORY.

THE M. Lindsay Rubber Manufacturing Co. have begun the manufacture of the line of rubber sundries which they have been marketing so successfully for a number of years past. The location of their factory is at Broadway and Academy street, Astoria, which is in the borough of Queens, New York city, and is readily reached from the heart of the city by crossing the East river at Thirty-fourth street. The offices of the company, maintained formerly at No. 298 Broadway, in Manhattan, have been transferred to the factory. Among the goods made are the "Agnota" brand of rubber gloves, the company's patented line of nipples, and the "vest pocket

punching bag." The M. Lindsay Rubber Co. existed for several years as a jobbing house in New York and at Washington. Under the present title the company was incorporated November 27, 1903, under the laws of New York, with \$150,000 capital.

NEW ENGLAND RUBBER CLUB COMMITTEES.

THE Executive Committee of the New England Rubber Club have appointed the following committees to which, as members *ex officio*, should be added the name of the secretary, treasurer, and assistant secretary of the Club:

Committee on Dinners.—F. H. Jones, chairman; William Keyes, Ira F. Burnham, Eugene H. Clapp, O. A. Barnard.

Entertainment Committee.—George H. Mayo, chairman; E. S. Williams, W. F. Farwell, Edgar E. Fay, R. L. Rice.

Committee on Resolutions.—Arthur W. Stedman, E. E. Wadbrook, George P. Whitmore.

Auditing Committee.—George P. Eustis, J. Frank Dunbar.

Sports Committee.—W. E. Barker, chairman; F. C. Hood, R. L. Chipman, F. D. Balderston, James H. Learned.

DAYTON RUBBER CO. (DAYTON, OHIO.)

THE trade mark adopted for the mechanical rubber products of this new company represents the leaf of a rubber tree, on which is cut the word "Dayton," the whole presenting a pleasing appearance, especially when the leaf is printed in green. Besides, the device is simple, and easily remembered.



NEW CENTURY RUBBER CO.—CLAIMS SETTLED.

NORMAN GREY, of Camden, New Jersey, receiver of the New Century Rubber Co., has mailed checks to creditors for 51 per cent. of their claims, this being the first and final distribution, under the order of the court. The company was incorporated January 7, 1901, to reclaim rubber by a new process, with works at East Burlington, N. J. It was adjudged insolvent August 22, 1903, and Mr. Grey appointed receiver.

NORFOLK RUBBER CO. (BOSTON) ASSIGN.

THE Norfolk Rubber Co. (No. 91 Bedford street, Boston), manufacturers of mackintoshes and coats, on May 14 made an assignment for the benefit of creditors to Leonard G. Roberts, of Boston. It is stated that the assignment was caused by the dull season and the inability to collect outstanding accounts. The company was incorporated in 1892 under Maine laws, and its capital was reported recently at \$15,800. Charles E. Morse is president and William H. Wilder, Jr., treasurer.

WHERE AN EMPLOYER WAS NOT TO BLAME.

THE circuit court at Akron, Ohio, has rendered a decision of general importance to rubber manufacturers and their employes. Addison McClurg, an employé of the Diamond Rubber Co., sued that company in the court of common pleas for \$20,000 for damages for personal injuries received in their plant on February 21, 1901. He alleged that while engaged in mixing rubber in one of the company's mills his left hand was caught in the rollers and mangled so badly as to make amputation necessary. He claimed that the accident was due to the negligence of the company, alleging that he was not familiar with the work and that the foreman had failed to warn him of the danger. He was given a judgment in the common pleas for \$3000, but the higher court reversed the decision, holding

that McClurg was responsible for the accident in that he failed to keep his hands above the rollers as he had been instructed. As such an accident had never happened before, the court held that the company were not bound to guard against it. "It is not negligence on the part of a master to fail to instruct an employ   to avoid an injury which the master had no right to expect would happen," said the court. "It is only to the injuries that is likely to occur that he is bound to anticipate and guard against. The danger was obvious. He needed no instructions to keep his hands from the rollers. He disregarded his instructions and cannot recover."

REBUILDING OF A RUBBER PLANT.

THE contract for rebuilding the Plymouth plant of the Boston Woven Hose and Rubber Co. has been awarded to Ernest L. Sampson, of Plymouth. This plant was partially destroyed by fire in January, with a loss of much valuable machinery. The large brick building is intact, and in addition to repairing the wooden buildings, a new brick structure, 40x80 feet and four stories high, has been planned, to be used as part of the reclaiming works. A new devulcanizer house for the large heaters will also be built. The new buildings will be of the most approved fire proof construction. A complete system of fire protection will be installed, including automatic sprinklers to be supplied from a 25,000 gallon tank placed on a steel tower 15 feet higher than the highest sprinkler head. An Underwriters' pump of 750 gallons per minute capacity will be connected with tank, sprinklers, and fire hydrant. The boiler house, which supplies steam for running the plant, has been rendered thoroughly fireproof. A new 100 horse power boiler has been added to the one already in use. The steam generating plant is used as an auxiliary to the water power which runs most of the machinery of the mill. It was the exceptional water power facilities at Plymouth which induced the company to establish their plant here. A series of turbine wheels convey the power from the tributary ponds and streams, which furnish an economical and never failing source of supply.

The new building will be devoted to the reclaiming of rubber. In this building will be the grinders, the separators, tanks, and washers used in the various processes of reclaiming. The rubber will be carried from one department to another by conveyors. So many labor saving appliances will be introduced that a small number of men can do the work that a few years ago would have required a large force of operatives. A part of the plant is devoted to the manufacture of linen fire hose, which is woven on specially constructed looms. Other looms weave the cotton duck for the company's special grades of hose or belting.

The Boston Woven Hose and Rubber Co. is one of the few rubber companies that manufacture every part of their product, taking rubber in the crude stage and the cotton before it is twisted into strands for weaving, and turning out the completed hose, belt, or other mechanical rubber goods.

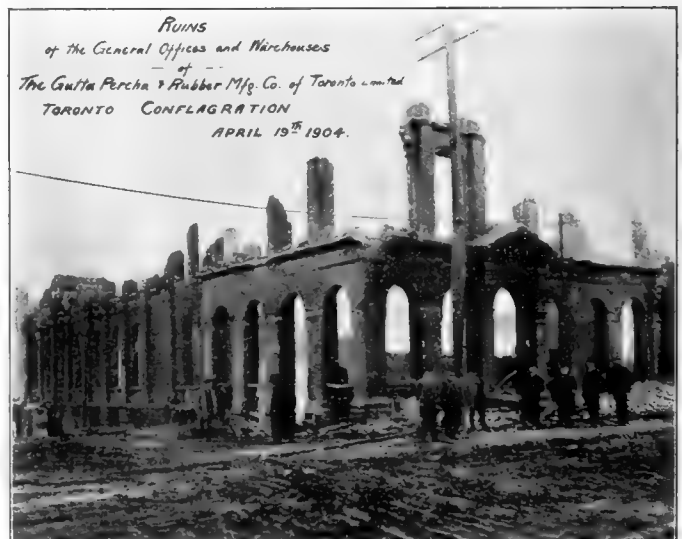
THE GUTTA PERCHA COMPANY AFTER THE FIRE.

THE illustration on this page shows how complete was the ruin of the warehouses and general offices of the Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, at Nos. 45, 47, and 49 West Front street, Toronto, in the great fire of April 19. As indicated in our last issue, however, the completeness of this ruin, though representing \$500,000 in money, has not had the effect of interfering with the business of the company. One of their largest customers wrote to the firm ten days after the fire:

We might say, that so far as our orders from day to day are concerned, they have practically been delivered as heretofore, with almost no delay,

and had we not read of the fire, we would hardly be aware from any inconvenience that we are suffering, that one had taken place.

The fire started at about 8 P. M. some two blocks from this building, and when President H. D. Warren arrived on the scene a little later there were hopes that the property could be saved. He promptly turned on the electric lights throughout the premises, so as to attract any of the office staff who might come down town, of whom there were soon a dozen on hand. It was soon seen, however, that the building was doomed, and an hour was spent in filling the vaults with such things as might be serviceable in continuing the business, special vaults having been built several years ago in anticipation of a destructive fire. All the books, records, letter files, and documents of the company were regularly kept there, but on the night in question the contents of every desk throughout the building was systematically placed in the vaults and thus escaped destruction. The company have now in hand all the current memoranda so valuable in carrying on business. They saved for instance, all fire hose record threads and many other such things that would not ordinarily be kept in a vault. This work was kept up until Mr. Warren and his clerks had been repeatedly warned to leave the building, and they closed the vaults at the last moment at which it was possible to escape with their lives. No attempt was made to save any merchandise, but, being insured fully, the company are not concerned in this regard. There has never been a time before when the company were so well fixed to replace the burned stock. Their third new and largest mill room, with its 1000 HP. engine, is completed and running. They have never before had such a large supply of crude rubber, cotton, reclaimed rubber, and ingredients generally. Besides, for the first time in some years they have a large reserve of coal, so that everything is propitious for a large and speedy output, besides which their factory force of 600 and their office staff of 60 are working enthusiastically to offset any inconvenience caused by the fire. While the fire was raging the company's chief engineer quietly contracted for 1,000,000 brick and for the first call on the services of two of the largest mason and carpenter contractors. Before midnight temporary offices had been arranged for, at No. 15 Wellington street, East, and by 10 the next morning the clerical force was at work, while goods were being shipped in from the factory. It is understood that the work of rebuilding will be postponed, however, on account of certain requirements in the new building laws and the disposition of the insurance companies to advance rates.



AMERICAN RUBBER CO.

THE American Rubber Co. (Boston) during the past two years have filed certificates of condition with the commissioner of corporations of Massachusetts, showing details as follows:

ASSETS.		Mar. 31, '04.	July 1, '03.
Real estate.....	\$	174,214	185,904
Machinery.....		148,617	136,927
Stock in process.....		1,651,009	1,174,254
Cash and debts receivable.....		422,675	839,780
Special contract with U. S. Rubber Co....		809,000	800,000
Miscellaneous.....		22,000	22,000
Totals	\$	3,218,515	3,158,865
LIABILITIES			
Capital stock.....	\$	1,000,000	1,000,000
Accounts payable.....		47,553	17,014
Floating debt—special		800,000	800,000
Surplus fixed.....		865,734	865,734
Profit and loss.....		505,228	436,117
Dividends unpaid.....		....	40,000
Totals.....	\$	3,218,515	3,158,865

WOONSOCKET RUBBER CO.

THE Woonsocket Rubber Co. (Woonsocket, Rhode Island), having one of their factories over the Massachusetts border, are required to file annual reports with the commissioner of corporations of the latter state. The last report so filed, showing condition on March 31, 1904, is summarized below, in connection with which are the figures for the preceding year:

ASSETS.		1904.	1903.
Real estate	\$	896,778	897,543
Machinery.....		324,135	324,135
Stock in process.....		2,210,044	1,640,297
Cash and debts receivable.....		157,957	3,411,307
Taxes, etc.....		711	1,189
Adjustment of inventory.....		1,198,994	1,198,994
Special contract with U. S. Rubber Co....		2,800,000	....
Totals... ..	\$	7,588,619	7,473,466
LIABILITIES.			
Capital stock.....	\$	3,000,000	3,000,000
Debts.....		31,099	2,905,995
Special indebtedness.....		2,800,000	....
Surplus fixed.....		1,613,900	1,613,900
Profit and loss.....		143,620	53,567
Totals.....	\$	7,588,619	7,473,466

BOSTON RUBBER SHOE CO.

THE Boston Rubber Shoe Co. have filed the following statement of condition with the commissioner of corporations of Massachusetts, dated April 1, 1904:

ASSETS.		1904.	1903.
Real estate.....	\$	768,525	758,525
Machinery.....		375,515	364,788
Merchandise and stock in process.....		4,461,304	2,626,837
Cash and debts receivable.....		1,594,294	2,288,675
* Special Contract U. S. Rubber Co....		4,800,000	4,800,000
Miscellaneous.....		17,390	17,430
Total.....	\$	12,017,028	10,856,255
LIABILITIES.			
Capital stock.....	\$	5,000,000	5,000,000
Accounts payable.....		1,130,960	....
Funded indebtedness.....		4,800,000	....
Balance profit and loss.....		1,054,872	996,905
Debenture bonds.....		....	4,800,000
Interest on bonds.....		31,196	59,290
Total.....	\$	12,017,028	10,856,255

* To pay principal and interest of debenture bonds as they may mature to be drawn.

AMERICAN CHICLE CO. IN EUROPE.

HENRY ROWLEY, treasurer, on April 30 returned from Europe, where it is understood that he arranged to establish a European branch, on terms which the directors deem eminently satisfactory. The plans embrace the opening of a factory, for which purpose a plant in London occupied formerly by The Holbrook Co., Limited, has been secured. The extent of the exports of American chewing gum is thus indicated by the United States customs returns for the fiscal year 1902-3:

Great Britain.....	\$12,302	British Australia.....	\$ 1,415
Other Europe	1,074	Philippine Islands.....	197
Africa (mainly British South).....	8,550	All other.....	763
North America.....	2,941	Total.....	\$27,242

While not so stated, it is assumed that these exports relate mainly to the product of Chicle gum. The following figures, from the customs returns, indicate the extent of the use of Chicle in the United States:

	1901-02.	1902-03.
Imports for consumption (pounds).....	2,865,929	3,282,804
Import value.....	\$682,602	\$779,140
Duties (10 cents per pound)	\$286,593	\$328,230
Average value per pound.....	23.8 cents	23.7 cents
Average rate of duty <i>ad valorem</i>	41.99%	42.13%

In addition to imports for consumption, the receipts in the United States include the supplies of crude gum required in Canada, where the American Chicle Co. have a factory. The exports from the States to Canada for the last fiscal year were 897,675 pounds.—The regular monthly dividend of 1 per cent. on the common shares (\$6,000,000) was payable on May 25. The last quarterly dividend of 1½ per cent. on the preferred shares (\$3,000,000) was paid April 1.

RUBBER FOOTWEAR FOR THE POOR INDIANS.

BIDS were opened at St. Louis, on May 5, for supplying rubber boots and shoes for the Indians dependent upon the government. The successful bidder—except for the last item on the list as printed below—was J. Edmund Strong, of Chicago, whom we understood to represent the Edwards-Stanwood Shoe Co., of that city, who obtained the contract last year for supplying such goods:

2845 pairs boys' arctics; sizes 1-2, 70¼ cents; 3-6, 88 cents.
 990 pairs misses' arctics, 61 cents.
 1655 pairs women's arctics, 76 cents.
 1380 pairs men's arctics, \$1.04.
 485 pairs boys' rubber overshoes, sizes 1-2, 35½ cents; 3-6, 44 cents.
 555 pairs misses' rubber overshoes, 31 cents.
 1370 pairs women's rubber overshoes, 38 cents.
 342 pairs men's rubber overshoes, 54 cents.
 588 pairs men's rubber boots, \$2.29.

RUBBER GOODS FOR THE POSTAL SERVICE.

BIDS were opened in Washington on May 5 for supplies of stationery for the Postoffice department and the postal service—including India-rubber goods—for the fiscal year beginning July 1, 1904. Fewer rubber bands are called for than formerly, and more rubber stamps. The specifications included 5800 pounds of bands, 17,256 erasers, and a total of 65,000 rubber stamps, in great variety, in addition to a large amount of rubber type. Five years ago (fiscal year 1899-1900) there were required 9000 pounds of bands, 10,600 erasers, and 10,160 rubber stamps of all kinds. The specifications this year also include 7000 flexible stamps, of printers' roller composition, to contain such words as "Due 2 cents," "Returned to writer," and the like, and some to contain the name of postoffice and state. Besides, 75 dies and molds are called for, to be used in making printers' roller composition stamps at the Postoffice department.

The requirements for composition stamps, by the way, are smaller than for the past two years, in each of which 10,000

were called for. Previously none were specified. A leading manufacturer of rubber stamps in New York asserts that his trade has nothing to fear from the competition of composition stamps; that such stamps were thoroughly tested years ago and found to lack merit; and that the government buys them solely because of their low cost.

PRICES OF RUBBER STAMPS.

It is asserted in the rubber stamp trade that it is impossible to advance prices of products, to meet the increased cost of rubber. But rubber is not the item of chief cost in such work; other materials enter to a large degree into it, and the labor cost is large. One manufacturer says that a certain grade of stamp rubber used by him costs 73 per cent. more than it did five years ago, but that by improved methods and by reducing the waste of rubber, the net cost of his material is very little more.

RECEIVER FOR ROYAL RUBBER WORKS CO.

IN the supreme court at Hartford, Connecticut, on May 19, Frederick W. Starr was appointed receiver for The Royal Rubber Works Co., of that city. The motion for a receivership was made by the Fairfield Rubber Co. and other creditors. The company was incorporated November 2, 1903, with \$4000 capital, to do a jobbing trade in rubber goods, with hospital supplies a specialty.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Apr. 23	8,750	15	12½	16,622	64½	57
Week ending Apr. 30	19,520	17½	14½	7,440	58½	62¼
Week ending May 7	8,295	18¼	16	3,642	68	64¾
Week ending May 14	1,249	16¼	15¾	1,215	65½	64½
Week ending May 21	2,870	16¾	15¾	3,730	68	65

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending Apr. 23	1,626	16¾	15¾	100	76½	76½
Week ending Apr. 30	400	16½	16	100	77	77
Week ending May 7	400	16½	15¾	420	77	76¾
Week ending May 14	400	16	15½	100	77½	77¼
Week ending May 21	1,110	15¼	15	100	77	77

RECEIVERS FOR VICTOR RUBBER CO.

CREDITORS of the Victor Rubber Co. (Springfield, Ohio), having filed a petition in bankruptcy against that concern, and asked for the appointment of a receiver, Judge Thompson, in the United States district court, at Cincinnati, on May 4, appointed as receivers Emery J. Smith, of Columbus, and George W. Collett, of Springfield. No statement of the company's financial status was issued, but it was understood that the receivers would take charge of the factory (at Snyder-ville, Ohio) as soon as possible, and at least complete the finishing of goods in process of manufacture. Following the petition against the Victor Rubber Co., a petition in bankruptcy was filed against John S. Harshman, president of the company, and its heaviest stockholder. Mr. Harshman has been interested in various other local enterprises, with the result of becoming heavily involved. Rending the proceedings noted above, sixteen suits, for sums aggregating over \$110,000, were filed against the Victor company, or Mr. Harshman, or both. Most of them were filed by banks, but three

were on claims of crude rubber merchants.—The Victor Rubber Tire Co. was incorporated in June 1895, to market the "Victor" tire, patented by Theodore B. Blosser, and reorganized in March, 1898, with Harshman at its head. The company had several branches at which the tires made for them were applied to wheels, but no goods were made by them until 1898, when a second company was incorporated, under the name Victor Rubber Co., to make the tires required by the former company, with the addition of some mechanical goods. It was reported in THE INDIA RUBBER WORLD of April last [page 248] that this business had been reorganized, George G. Peckham, of Dayton, Ohio, succeeding to Mr. Harshman's interest and official position, but for reasons not stated publicly Mr. Peckham and his associates soon withdrew, leaving the former head of the business in control.

RUBBER GOODS MANUFACTURING CO.

THE directors of this company, at a meeting on May 30, declared the twenty-first regular dividend of 1¼ per cent. on the preferred shares, out of earnings, payable June 14, to shareholders of record on June 3. Transfer books will be closed between the dates mentioned.

REPUBLIC RUBBER CO. (YOUNGSTOWN, O.)—BRANCHES.

MR. L. J. LOMASNEY, formerly of New York, and now vice president and general manager of the Republic Rubber Co., reports the opening by that company of a branch store in Chicago, at No. 116 Lake street. This is one of the handsomest rubber stores in Chicago. The tire department is in charge of F. A. Hastings and the mechanical lines in charge of J. H. Kelly. Also, a branch store has been opened in St. Louis, for distributing and applying tires, under the management of George M. Hoffman, who has an extensive and valuable acquaintance with the trade.

ADVANCE IN RUBBER SHOE PRICES.

ON June 1 the new discount rate of the United States Rubber Co. goes into effect. That is, an extra 5 per cent. allowed on orders received before that date has been withdrawn. The discounts now are—

First quality (except Woonsocket and Meyer).....25 @ 3 %
Woonsocket and Meyer brands.....25 @ 5 @ 3 %
Second quality (except Rhode Island).....25 @ 10 @ 3 %
Rhode Island brand.....25 @ 10 @ 5 @ 3 %
Colonial brand.....45 %

Canadian rubber footwear lists were also subject to an extra discount of 5 per cent. up to June 1, which is now withdrawn.

GENERAL RUBBER CO. TO IMPORT RUBBER.

THIS company was incorporated March 24, 1904, under the laws of New Jersey, with \$2,000,000 capital authorized (of which \$1,000,000 is stated to have been paid in), to buy and sell, import and export, India-rubber, Caucho, Gutta-percha, and other like gums; to acquire and develop rubber forests or plantations; to deal in all kinds of merchandise incident to trading in rubber and exploiting sources of rubber; and to engage in the business of transportation as needed for carrying out the general purposes of the company. The incorporators named are Edward A. Day, Morristown, N. J.; William D. Kellogg, Elizabeth, N. J.; Jerome T. Congleton, Newark, N. J. The registered office in New Jersey is at No. 765 Broad street, Newark, and the agent of the company therein is Edward A. Day. The company has organized with Samuel P. Colt, president; Lester Leland, vice president; John J. Watson, Jr., treasurer, and an executive committee consisting of Messrs. Colt and Leland and E. C. Benedict. The stock of the company is owned by the United States Rubber Co. and the general offices are located in the same building with that company, No. 42 Broadway, New York. This company has been formed for carrying

out the new policy outlined in the recent report of the United States Rubber Co., of importing direct their requirements in crude rubber.—Direct imports of crude rubber by the United States Rubber Co., since July 1, 1903, according to the statistics published monthly in THE INDIA RUBBER WORLD have amounted to 6,484,200 pounds of Pará sorts and 2,400,500 pounds of Africans.

AFFAIRS OF GEORGE WATKINSON & CO.

A MEETING of the creditors of George Watkinson & Co., the bankrupt rubber shoe manufacturers, in Philadelphia, on May 20, adjourned without any definite action, and with the understanding that another meeting would be called soon. Lawyer William M. Ivins, of New York, who appeared in behalf of Heilbut, Symons & Co. (said to be the largest creditors), stated that soon after the sale of the business of Watkinson & Co. was confirmed, on January 20, 1904, it was learned that the estate was likely to yield much less than was at first expected. Hence a committee was formed, in behalf of the creditors, consisting of Edward S. Hatch, for William Wright & Co.; C. O. Mayer, for O. G. Becker & Co.; and Mr. Ivins, for Heilbut, Symons & Co., to examine the accounts of the estate. The meeting above mentioned was called to hear the report of the committee, who presented a petition, prepared by Mr. Ivins, asking for the removal of the trustee—The Provident Life and Trust Co.—and the sur-charging of its account. The report stated that the committee had found "not only an ordinary, but a very gross mal-administration by those who are charged by the court with the protection of our interests." Mr. Ivins declared that after a creditors' meeting in April last, when the trustee was given authority to borrow not more than \$75,000, the latter never went to the court or to the creditors for further authority, but steadily went along to extend his liabilities until they amounted to upwards of \$202,000. In order to get this amount back in the treasury without letting the creditors know that the business was losing money, Mr. Ivins contended the trustee actually expended \$87,000 in manufacturing goods which afterwards sold at a figure \$54,000 less than the actual cost of production, thus causing an actual loss to the creditors, he said, of \$141,000. There was much discussion over the adoption of the report, but without result. No date was fixed for the adjourned meeting.

THE INDIA RUBBER WORLD'S Philadelphia correspondent reports: "The Watkinson factory, at Thirty-sixth and Reed streets, has been sold to Mitchell and Pierson for \$92,500, subject to ground rents aggregating \$1830. The properties cover an area of about 500 feet square with a large frontage on the Schuylkill river. After the buildings are thoroughly overhauled they will be occupied by the purchasers as a glazed kid manufactory."

THE RUBBER TRADE IN CHICAGO.

BY A RESIDENT CORRESPONDENT.

WEATHER conditions during the last month have not been in the least to the liking of the rubber tire and garden hose dealers. The latter part of April promised well for good weather during May, but while May opened up with fine weather it lasted only two days before the temperature fell. Cold, threatening and frequently rainy weather predominated during the greater part of the month. This seriously interfered with automobiling and the automobile tire trade. The wet season also resulted in further delay by the consumer in laying in garden hose.

The last week of May, however, ushered in some genuine spring weather. Local managers of the Goodrich, Goodyear, Diamond, Hartford, and other tire manufacturers have had a

taste of the kind of season they had hoped for earlier in the year, though it will be impossible for them to make up the loss caused by the unfavorable weather during April and May.

In mechanical rubber lines, business has been good. While there has been a slight let up during May as compared with the volume of business done during April, the May showing will be a little above the average. Several good contracts have been landed by managers of local branch houses. R. T. Whelpley, manager of the Chicago branch of The B. F. Goodrich Co., secured a good contract this month from the United States Steel Corporation for conveyor belting.

The bicycle tire business has shown a still further falling off as compared with that of last year. The motorcycle fad which was to a certain extent expected to lead to a revival of bicycle riding has not materialized in Chicago and the west. There has been very little increase in numbers of those using the motorcycle.

The demand for bicycle tires, according to local managers, should average, year in and year out, about the same. It is the country trade that regulates that demand in Chicago and the west. Eight years ago the city trade took the great bulk of bicycle tires but when the craze for bicycle riding died out in the cities the bicycle began to be adopted in the country towns as a means of locomotion. The cheapness of the wheels caused this demand to extend to the farmer boys and this demand in the smaller towns in the country has continued.

In the footwear line business has been exceedingly good for this time of the year. The announcement of another 5 per cent. advance by the United States Rubber Co. has caused customers to rush in their detailed orders during the last two or three weeks. While business among the jobbers in the rubber shoe line is quiet, the manufacturers and their agents have no cause for complaint.

NEW INCORPORATIONS.

THE Seamless Rubber Glove Co. (Akron, Ohio), May 14, 1904, under Ohio laws, to manufacture rubber gloves; capital, \$25,000. Incorporators: Jacob Pfeiffer, William F. Pfeiffer, S. G. Rogers, A. J. Rowley, and J. A. Bradley. The company has no direct connection with the Miller Rubber Manufacturing Co. (Akron), though owned by the same interests. Mr. Pfeiffer informs THE INDIA RUBBER WORLD that the new company has been organized for the purpose of jobbing certain rubber goods that are not made by the Miller company.

—The Duplex Rubber Co. (Cleveland, Ohio), May 7, 1904, under Ohio laws; capital, \$10,000. Incorporators: Norton F. How, H. J. Caldwell, C. L. Denton, A. R. How, and H. H. Ollyn.

—The Nailless Rubber Horseshoe Co., May 2, 1904, under Colorado laws; capital, \$100,000. Incorporators: Frank A. Burnell, Joseph A. Osner, Frank A. Pattee—all of Denver, Colorado.

—The Chamberlin Rubber Co. (Rochester, N. Y.), April 22, 1904, under New York laws, to sell rubber goods; capital, \$20,000. Directors: James R. Chamberlin, Jane Chamberlin, George F. Nelson. To continue the business of retailing and jobbing rubber goods established in Rochester by Mr. Chamberlin many years ago.

—Old Colony Rubber Co. (Jersey City, N. J.), May 22, 1904, under New Jersey laws, to manufacture India-rubber and Gutta-percha goods; capital, \$125,000. Incorporators: Charles N. King, Le Grand Bouker, W. Monds Greene—all of Jersey City, Office: No. 243 Washington street, Jersey City.

—The Overland Rubber Co., May 17, 1904, under Colorado laws; capital, \$10,000. Incorporators: Cyrus B. Tullis, Charles C. Collins, and Walter S. Tullis—all of Denver, Colorado.

A. W. FABER SUES A RUBBER COMPANY.

SUIT has been filed in the United States circuit court for the district of New Jersey, against the C. Roberts Rubber Co., of Newark, by Otilie von Faber-Castell and Alexander von Faber-Castell, trading as A. W. Faber, in Germany and New York, alleging infringement of the plaintiff's trade rights in the manufacture of lead pencils, erasive rubber, and rubber bands. The complainant avers that the C. Roberts Rubber Co. sell their product of stationers' rubber goods only to the firm of Eberhard Faber, in New York, which firm owns a majority of the shares of the Roberts company, and that the said goods are manufactured in imitation of those of A. W. Faber, and are put up under labels similar to those of the complainant. The bill recites that on May 11, 1901, the plaintiffs sued in the United States circuit court in the southern district of New York, for an injunction to restrain the firm of Eberhard Faber from using the name "Faber" without some distinguishing prefix, as "Eberhard," and that such injunction was granted. Notwithstanding the decision in the former suit, it is alleged that the Roberts company, with J. Eberhard Faber as its principal stockholder, is violating the terms of the injunction.

TRADE NEWS NOTES.

THE Fire Hose department of the Boston Woven Hose and Rubber Co. has been placed in charge of Mr. P. G. Alexander, who succeeds Mr. J. M. Hardy. The company will continue to make the same grades of cotton and rubber fire hose as heretofore, and the same high standard will be maintained. The many cities and towns throughout the Union where the fire hose of this company is in use are the best evidence of the appreciation in which it is held by fire departments and chief engineers.

=R. C. King has become manager of the St. Louis branch of the New York Belting and Packing Co., Limited. Mr. King was previously for 10 years connected with this company as a traveler, after which, for four years, he had charge of The B. F. Goodrich Co.'s branch house at Wilkesbarre, Pennsylvania.

=Mr. Alonzo P. Spear has been appointed manager of the Boston selling branch of the Gutta Percha and Rubber Manufacturing Co., at No. 71 Pearl street. Mr. Spear was connected formerly with the Boston Woven Hose and Rubber Co.

=It is understood that the suit of the Gutta Percha and Rubber Manufacturing Co. against the Peerless Rubber Manufacturing Co., for alleged infringement of patent No. 543,583 on rubber floor tiling, granted to John Murphy July 30, 1895 [see THE INDIA RUBBER WORLD, November 1, 1903—page 59] has been settled out of court.

=The Inter-State Rubber Co., jobbers of rubber footwear, Omaha, Nebraska, in addition to their store at No. 1109 Harney street, have leased the building Nos. 1206-1208 Douglas street, for storage purposes.

=The Akron Dental Rubber Co., mentioned in the last INDIA RUBBER WORLD as having been incorporated by Arthur C. Squires and his associates, will build a factory at Akron, Ohio. The capital named is \$25,000.

=The annual meeting of the Consolidated Rubber Tire Co., scheduled to take place in Jersey City on May 2, was adjourned until June 2.

=The factory of the Goodyear Rubber Co., at Middletown, Connecticut, resumed work on May 13.

=It is reported that the plant of the Cable Rubber Co. (Jamaica Plain, Massachusetts), purchased recently by the Reading Rubber Manufacturing Co., has been sold by the latter to the Clifton Manufacturing Co. (Boston), who will probably resume the operation of the plant.

=The Laurel Rubber Co. have removed from Passaic, New Jersey, to New York city, their office being located at No. 346 Broadway, and their factory at Nos. 556 560 West Twenty-fifth street. The company was incorporated early in 1903, and has been engaged in making erasers and other stationers' supplies. It is now intended to take on other lines of production.

=Wilmer Dunbar, for some years past superintendent of the Alden Rubber Co., has accepted a position as assistant superintendent with the Chicago Electric Hose Co. (Wilmingtong).

=The I. B. Kleinert Rubber Co., whose Toronto factory, at Nos. 26-28 Front street, was destroyed by the recent fire, were insured to the extent of \$24,000. Their new address is No. 1487 King street, West, Toronto.

=The Stodder tire, the essential feature of which is a specially treated fabric, intended to lessen liability to puncture, is now manufactured by the International Automobile and Vehicle Tire Co. (Milltown, New Jersey).

=The T. S. Buck Manufacturing Co. (New York), mentioned in our last issue as a new corporation under New York laws to manufacture rubber stamps, had previously existed for a number of years as a New Jersey corporation. The change was made as a matter of convenience.

=George A. Alden & Co. have removed from No. 170 Summer street to No. 60 Chauncy street, Boston, where they have elegantly appointed offices, arranged particularly with a view to handling their constantly increasing business.

=Wirt & Knox Manufacturing Co. (Philadelphia) report having closed a contract to supply their "Hump" swinging hose rack for all the buildings at the St. Louis World's Fair this year, for which purpose something more than 1000 racks will be required.

=C. J. Bailey & Co., No. 22 Boylston street, Boston, have enlarged their already extensive retail rubber goods store, adding a department for ladies' walking suits and skirts.

=The Paragon General Manufacturing and Trading Co., a New Jersey corporation, with \$50,000 capital authorized, is in the hands of a receiver—August Zeigruer, Jr., of Jersey City. The company was formed to make golf balls, and did turn out 300 dozen, but gave up business on these proving unsalable.

=The Hohmann & Maurer Manufacturing Co. (Rochester, New York), well known makers of high grade thermometers and other measuring instruments, have just issued a new catalogue which is replete with valuable and useful information, with particular reference to heating and ventilating; also mining, engineering, etc.

=The Franklin P. Shumway Co. (Boston), is a Massachusetts corporation, just formed, with \$30,000 capital, at No. 373 Washington street, to continue the advertising business which Mr. Shumway has built up during 27 years of personal endeavor in this field. Besides having a large office force, the new company will be capably represented by a number of experienced canvassers outside.

=The first meeting of the creditors of the Victor Rubber Co., in bankruptcy, whose affairs are reported in some detail on another page, will be held at Springfield, Ohio, on June 3. Frank M. Krapp, referee in bankruptcy, announces that at such meeting an application for the sale of property of the bankrupt will be considered.

=The Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, whose premises were burned recently, have purchased the building and site on the southeast corner of Yonge and Wellington streets, Toronto, occupied formerly by the Royal Insurance Co., and will at once proceed to alter and improve the same to adapt them to their requirements as an office and warehouse building.

=The regular semi annual dividend of \$3 per share has been declared on the preferred stock of the Boston Woven Hose and Rubber Co., payable June 15.

=Captain John M. Connery, who recently resigned as paymaster at the factory of the National India Rubber Co. (Bristol, Rhode Island), to accept a position in another line of business, was presented on May 22, by the employes of the company, with a gold watch and a purse containing \$100.

=The resignation is announced of John S. McClurg, superintendent of the Republic Rubber Co. (Youngstown, Ohio), to take effect on July 1.

PERSONAL MENTION.

THE Hon. L. D. Apsley, of the Apsley Rubber Co., at the recent Republican convention in the fourth Massachusetts district, was elected delegate to the forthcoming Republican national convention at Chicago, by acclamation.

=Mr. C. Edward Murray, of Trenton, treasurer of the Empire Rubber Manufacturing Co., and of the Crescent Belting and Packing Co., at the Republican convention in the Fourth congressional district of New Jersey, on May 10, was elected delegate to the Republican national convention at Chicago.

=Mr. William T. Rodenbach was elected warden of the borough of Naugatuck, Connecticut, at the annual election on May 2. He has been for 16 years a member of the local school board and is now president of that body. Mr. Rodenbach, who is a native of New York city, is treasurer of the Goodyear's Metallic Rubber Shoe Co., general manager of the United States Rubber Co.'s rubber reclaiming plant at Naugatuck, president of the Naugatuck Manufacturing Co., and a trustee of the Naugatuck Savings Bank. The office of warden was filled previously at one time by Mr. F. F. Shaffer, superintendent of the Goodyear's India Rubber Glove Manufacturing Co.

=Mr. H. Stuart Hotchkiss, vice president and secretary of L. Candee & Co. (New Haven, Connecticut), lately returned from a trip to Mexico.

=Mr. Kimball J. Fenno, formerly assistant treasurer of the Boston Woven Hose and Rubber Co., is devoting himself to public accounting, with offices at No. 53 State street, Boston.

=Mr. Ralph W. Stewart, Jr., of the Scottish Central Rubber Co. (Dunfermline, Scotland), who is on a visit to the United States, during which he will see the Louisiana Purchase Exposition, recently favored THE INDIA RUBBER WORLD offices with a call.

=Mr. Frederick Thomas Ryder, secretary of the Boston Rubber Shoe Co., was married on the evening of Tuesday, May 24, to Miss Blanch Bates Wise, of Maplewood, Massachusetts. The wedding reception, which was held at the residence of the parents of the bride, Mr. and Mrs. Daniel Parker Wise, was a most brilliant affair and attended by a host of friends of both bride and groom.

=Mr. and Mrs. Edward Clark, of Natick, Massachusetts, have issued invitations for the marriage of their daughter Helen Isabel, to Mr. Frank Blake Hopewell, on June 1, at 7.30 P.M. Mr. Hopewell is connected with L. C. Chase & Co. (Boston).

=Mr. G. Edward Habich, salesman for George A. Alden & Co. (Boston) was married April 30 to Miss Margaret K. Shepard.

=Mr. W. A. Joubert, who was formerly interested in Balata in the Guianas, has associated himself with the Tulija River Plantation Co., of Boston, whose plantation is in the state of Chiapas, Mexico.

=Benjamin B. Converse, long identified prominently with the leather trade of Boston, died at his home in Newton, Massachusetts, on May 14, in his eighty-first year. For 40 years he

was president or director, at different times, of two Boston banks. He retired from business two years ago. He was related to the Hon. Elisha S. Converse, both having been grandsons of Deacon Jonathan Converse, of Thompson, Connecticut [born 1760—died 1845].

=Alfred H. Smith, importer of toilet brushes, No. 84 Chambers street, New York, died of pneumonia in Paris, on May 9, in his sixty-first year. He was a native of Bridgeport, Connecticut, and had been engaged in the same business for 40 years. The house will be continued under the old name by a son, Roland H. Smith. The house has the American agency for the Russian rubber sponges.

=According to a Brussels newspaper, "*Le Colonel Samuel*, président de la U. S. Rubber Cie.," declares the sales of rubber shoes in this country last year to have realized "plus 150,000,000 de francs."

PARA RUBBER PLANTATION CO.

THE International Rubber and Trading Co., which formerly was the Para Rubber Plantation Co., has undergone another reorganization. Mr. John Cudahy, of Chicago, has been succeeded as president by Mr. Harvey Harding, of the banking firm of Bradstreet, Harding & Co., of Boston. A visit to the office of the company, at No. 52 Broadway, New York, found Mr. W. H. F. Holmes in charge, with the designation of managing director. Mr. Holmes said to THE INDIA RUBBER WORLD'S representative:

"Mr. Cudahy has resigned the presidency because he has not the time to give the attention necessary to the affairs of the company. He is still a director, and has not disposed of a dollar's worth of his interest. Mr. Harding, our new president, belongs to a banking house in Boston, which will be the fiscal agents of the company. The company has had many rebuffs and setbacks, but we believe we have a good proposition. We have a clear title to all the property along the Casiquiare river, and are persuaded that there are millions of rubber trees on it. The difficulties, we appreciate, relate to labor and transportation. In regard to the former we have experienced many delays. We had once organized a band of 300 or 400 laborers when the revolutionary troubles in Venezuela scattered them. As long as there is disturbance and war there these men are liable to be impressed as soldiers. We hope, however, to have a force ready in the near future to begin the business of opening rubber camps and marking out *estradas*. As for transportation, we do not feel that it will be an insurmountable obstacle when once we can arrange for gathering the rubber. The Casiquiare is navigable for small, light draught craft during the entire year, and so is the greater part of the Orinoco. One of our agents, who started from Manáos, went up the Negro, through the Casiquiare, and down the Orinoco, reports that there is rubber on the ground in great quantities, and that the way is open."

"Are you still selling stock?" Mr. Holmes was asked.

"We are not selling stock right now, but after a while we will offer some to the American public. I have placed a considerable amount of the stock abroad, in France mostly. In fact I have been abroad on this business for the greater part of two years."

Mr. John Cudahy, when seen by THE INDIA RUBBER WORLD'S Chicago correspondent, said he had no statement to make regarding the change in the company's affairs, but that he might have after getting information expected from the East. Mr. Cudahy states that he has disposed of the greater part of his interests in the company. He resigned the presidency the latter part of January, but it was not accepted at the time and the matter was kept quiet.

HIDALGO—A NEW PLANTING COMPANY.

THE Hidalgo Plantation and Commercial Co. was incorporated March 4, 1904, under the laws of California, to engage in the cultivation of India-rubber and coffee in the department of Soconusco, state of Chiapas, Mexico. The officers and directors are: John W. Butler, president; O. H. Harrison, vice president; H. W. Smith, secretary; E. Noel, assistant secretary; Donald J. McKay, Walter Cox, F. H. Abbott. The head office is at No. 713 Market street, San Francisco.

Readers of THE INDIA RUBBER WORLD are familiar with the names of Messrs. Butler and Harrison, in connection with La Zacualpa Rubber Plantation Co. The development of La Zacualpa plantation now having progressed to a point where further capital is not required, the same interests have formed the Hidalgo company, for the development of additional lands

adjoining Zacualpa. The area involved is 6000 acres, including the coffee estates (now producing) known as the "Harrison plantations," the principal one of which is known locally by the name "Hidalgo." It is stated that 1300 acres of coffee are now in full bearing.

The new company will establish the "Juilapa" rubber plantation, eventually to comprise 2500 acres, on the main road from Tapachula to Mexico City. For development purposes the Hidalgo company offer for sale 2500 shares, at \$400 each, on terms which will be furnished on application.

At the annual meeting of the Russian-French Rubber Works "Provodnik" at Riga, Russia, on March 25, the report showed a profit of 910,185 rubles on a transaction of 12,375,896 rubles [= \$6,373,586 44]. After providing for the various funds, a dividend of 15 rubles per share was declared.

REVIEW OF THE CRUDE RUBBER MARKET.

THE market remains firm, with continued high prices, the month having shown advances on many grades. Stocks continue short, and the practical close of the season for Pará arrivals renders impossible the accumulation of new supplies from that source for some time to come.

The most striking fact in connection with the crude rubber movement of late has been the increasing rate of imports by the United States. The figures herewith, derived from the customs returns, indicate the net imports into this country during the first nine months of the last six fiscal years; that is, what remained for consumption after deducting exports of rubber from the total quantities imported:

	Pounds.
Nine months ending March 31, 1899.....	39,522,946
Nine months ending March 31, 1900.....	36,553,508
Nine months ending March 31, 1901.....	36,894,178
Nine months ending March 31, 1902.....	34,787,735
Nine months ending March 31, 1903.....	37,830,342
Nine months ending March 31, 1904.....	44,701,341

The significance of the figures for the last nine months will be appreciated by comparing them with the average for the five preceding periods. That average was 37,117,742 pounds—an amount exceeded since July 1, 1903, by 20.43 per cent. Ordinarily increased imports are to be accounted for (1) by increased consumption, or (2) by an accumulation of market stocks. No unusually large stocks are now visible, however, and, with the exception of the rubber footwear branch, there is reason to believe that consumption has not been materially heavier during the nine months under review than in former seasons.

But the latest report of the United States Rubber Co., printed in full elsewhere in this Journal, points to another explanation of the large imports of rubber, and one which suggests the adoption of a new policy by large manufacturers—that "of purchasing, so far as possible, crude rubber and other materials sufficient to cover all goods that are sold in advance at fixed prices." The report shows for the United States Rubber Co. a decrease in cash, as compared with last year, of \$3,162,978.29, and an increase in inventories, including raw materials, of \$5,321,093.10, which changes are stated to be due in part to the new policy of the company. Moreover, these purchases are stated to have been made "at prices materially below the present market prices."

The comment of some people in the trade doubtless will be that "present prices" are largely due to the storing up of rubber for consumption, in advance of normal factory requirements, which policy, by the way, is not now confined to the

United States Rubber Co. The question is now being asked, what will be the course of prices when these large extra purchases have been completed, so far as this year is concerned, and new arrivals are required only for the normal factory demand in the general lines. Will there be a decline? To answer this, it would be necessary to know how much more rubber the large manufacturing companies have yet to arrive to complete their advance orders, and also how large the total production of rubber is to be.

The "crop" of Pará rubber this year, it seems, will be somewhat larger than in any previous year. The latest available figures permit this comparison to be made—beginning with July 1 in each year:

	1900-01.	1901-02.	1902-03.	1903-04.
To December 31..... tons	11,300	13,630	12,250	13,470
To May 31	26,300	28,750	28,090	a 32,835
To June 30.....	27,600	30,000	29,850	

[a—To May 28, 1904.]

Meanwhile there is no increase in the production of other than Pará rubbers. In many districts there is an absolute decline. For instance, the arrivals of Congo sorts at Antwerp for some time past have declined as follows:

	Tons.
Ten months ending April 30, 1901.....	4343
Ten months ending April 30, 1902.....	4330
Ten months ending April 30, 1903	4103
Ten months ending April 30, 1904.....	4098

The present period of high prices has existed for an exceptionally long time—a condition which should stimulate the shipment of rubber, if the limit of production has not been reached. In this connection, it may be of interest to note the following figures, showing the average invoice price of all rubber imported into the United States during the first nine months of six fiscal years:

	Per Pound.
Nine months ending March 31, 1899..	62.1 cents.
Nine months ending March 31, 1900.....	64 9 cents.
Nine months ending March 31, 1901.....	50.6 cents.
Nine months ending March 31, 1902.....	49.4 cents.
Nine months ending March 31, 1903.....	54.5 cents.
Nine months ending March 31, 1904.....	68.2 cents.

In regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 68 William street, New York), advises us:

"During May the money market has been quiet and very easy, rubber paper being taken by both city and out-of-town banks at 4½ @ 6 per cent., according to grade; during the last week of the month the demand decreased somewhat, and rates have hardened a little."

Following is a statement of prices of Pará grades, one year ago, one month ago, and on May 30—the current date:

PARÁ.	June 1, '03.	May 1, '04.	May
Islands, fine, new.....	87@88	108@109	109@110
Islands, fine, old.....	91@92	@	none here
Upriver, fine, new.....	91@92	111@112	113@114
Upriver, fine, old.....	97@98	112@113	114@115
Islands, coarse, new.....	56@57	64@65	64@65
Islands, coarse, old.....	@	@	none here
Upriver, coarse, new.....	72@73	86@87	88@89
Upriver, coarse, old.....	@	@	none here
Caucho (Peruvian) sheet.....	57@58	69@70	70@71
Caucho (Peruvian) ball.....	68@69	77@78	80@81

The market for other sorts in New York, changes in which have been about the same, is as follows:

AFRICAN.	CENTRALS.
Sierra Leone, 1st quality.....	Esmeralda, sausage.....
Massai, red.....	Guayaquil, strip.....
Benguella.....	Nicaragua, scrap.....
Cameroon ball.....	Panama, slab.....
Accra flake.....	Mexican, scrap.....
Lopori ball, prime.....	Mexican, siab.....
Lopori strip, prime.....	Mangabeira, sheet.....
Ikelemba.....	EAST INDIAN.
Madagascar, pinky.....	Assam.....
	Borneo.....

Late Pará cables quote:

Per Kilo.	Per Kilo.
Islands, fine.....	Upriver, fine.....
Islands, coarse.....	Upriver, coarse.....
Exchange, 12 1/8 d.	

Last Manáos advices:

Upriver, fine.....	Upriver, coarse.....
Exchange, 12 1/8 d.	

NEW YORK RUBBER PRICES FOR MARCH (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine.....	1.06@1.12	90@93	72@76
Upriver, coarse.....	84@87	72@74	58@61
Islands, fine.....	1.03@1.08	86@90	70@73
Islands, coarse.....	66@70	55@58	46@48
Cametá, coarse.....	66@70	57@61	48@53

NEW YORK RUBBER PRICES FOR APRIL (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine.....	1.07@1.12	90@93	73@74
Upriver, coarse.....	84@88	72@74	59@60
Islands, fine.....	1.05@1.09	87@91	71@73
Islands, coarse.....	64@69	56@60	47@49
Cametá, coarse.....	64@69	61@63	53@54

Ceylon Rubber Exports.

THE exports of crude rubber (the product of plantations) from Ceylon, from January 1 to April 18, 1904, were as follows:

To Great Britain.....	pounds	23,329
" Germany.....		2,756
" Belgium.....		100
" United States.....		63
Total.....		26,248
Total, same dates in 1903.....		12,452

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound—show only a few changes, and these in the direction of a declining market:

Old Rubber Boots and Shoes—Domestic.....	6	@ 6 1/8
Do —Foreign.....	5 1/4	@ 5 3/8
Pneumatic Bicycle Tires.....	4	@ 4 1/8
Solid Rubber Wagon and Carriage Tires.....	7	
White Trimmed Rubber.....	7 1/2	@ 7 3/4
Heavy Black Rubber.....	4	
Air Brake Hose.....	2 1/4	@ 2 3/8
Fire and Large Hose.....	1 3/4	@ 1 7/8
Garden Hose.....	1 3/8	@ 1 1/2
Matting.....	3/4	@ 1

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.		Total	Total	Total
	Fine and Medium.	Coarse.	1904.	1903.	1902.
Stocks, March 31.....	217	29 =	246	539	505
Arrivals, April.....	690	357 =	1047	1494	1483
Aggregating.....	907	386 =	1293	2033	1988
Deliveries, April.....	653	337 =	990	1478	1496
Stocks, April 30.....	254	49 =	303	555	492

	PARÁ.			ENGLAND.		
	1904.	1903.	1902.	1904.	1903.	1902.
Stocks, March 31.....	605	255	560	480	1550	1825
Arrivals, April.....	1460	2510	2655	590	1037	2145
Aggregating.....	2065	2765	3215	1070	2637	3970
Deliveries, April.....	1955	2615	975	575	962	3800
Stocks, April 30.....	110	150	2240	405	1675	170

World's visible supply, April 30.....	1981	3691	4196
Pará receipts, July 1 to April 30.....	23,805	23,756	23,599
Para receipts of Caucho, same dates.....	3729	3104	2736
Afloat from Pará to United States, April 30.....	573	731	674
Afloat from Pará to Europe, April 30.....	500	580	620

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The result of our inscription sale on May 10 was satisfactory, as 367 tons found buyers, out of 428 tons offered. After the sale 39 tons more were taken. The prices for fine grades show an advance of 1@2 per cent. over valuations based on the prices of the preceding month, whereas lots in ill condition sold at 20@30 centimes per kilogram below valuation. The average results may be calculated at 1@1 1/2 per cent. advance. The principal lot sold as follows:

	Valuation.	Sold at.
32 tons Lopori I.....	francs 10.75	10.80@10.90
30 " Lopori II (sticky).....	8.75	8.40@8.50
10 " Aruwimi I.....	10.	10.25
20 " Aruwimi II.....	9.50	9.55
22 " Lake Leopold I.....	10.60	10.30@10.55
20 " Lake Leopold II.....	8.50	8.75@8.95
22 " Mongalla.....	10.15	10. @10.20
13 " Red Katanga.....	10.20	10.25
12 " Equateur I.....	11.	11.15

The next monthly sale will take place on June 7 when about 300 tons will be catalogued. Actual stocks here are about 390 tons.

C. SCHMID & CO., SUCCESSEURS.

Antwerp, May 14, 1904.

ANTWERP RUBBER STATISTICS FOR APRIL.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, Mar. 31, kilos	700,735	271,884	841,678	843,834	735,060
Arrivals in April.....	179,098	605,743	307,834	613,368	507,911
Congo sorts.....	120,240	55,542	201,739	548,563	423,274
Other sorts.....	58,858	49,201	46,095	64,805	84,637
Aggregating.....	879,833	877,627	1,149,512	1,457,202	1,242,971
Sales in April.....	438,212	388,828	648,848	643,384	421,151
Stocks, April 30.....	441,621	488,799	500,664	813,818	821,820
Arrivals since Jan. 1	1,816,900	1,751,871	1,809,323	2,186,678	2,284,225
Congo sorts.....	1,443,046	1,565,531	1,698,426	1,911,800	1,899,270
Other sorts.....	373,854	186,332	110,897	234,822	384,955
Sales since Jan. 1.....	1,986,179	1,921,177	1,723,368	1,986,899	1,754,396

RUBBER ARRIVALS AT ANTWERP.

MAY 4.—By the *Albertville*, from the Congo:

Bunge & Co.....	(Société Générale Africaine) kilos	189,000
Do.....	Comité Speciale Katanga	7,000
Do.....	(Société "La Kotto")	1,500
Do.....	(Sultanats du Haut Obangi)	6,000
M. S. Cols.....		1,000
Do.....		1,000

Société Coloniale Anversoise.....(Sud Kamerun)	7,000	
Charles Dethier.....(La Haut Sangha)	6,000	
Société Coloniale Anversoise.....(Cie. de Lomami)	30,000	
Comptoir des Produits Coloniaux (Messageries fluviales du Congo)	1,500	
W. Mallinckrodt & Co.....(Alimaïenne)	3,100	
Société Coloniale Anversoise (Belge du Haut Congo)	500	
L. & W. Van de Velde.....(Cie. du Kasai)	80,000	333,600

Bordeaux.

PRICES MAY 2—FRANCS PER KILOGRAM.

Conakry niggers, red. 10 50@10.75	Lahou niggers..... 9. @ 9 15
Soudan niggers..... 9 95@10.25	Madagascar:
Soudan twists..... 9.40@ 9 65	Tamatave..... 8.25@ 8.90
Cassamance, A..... 7.40@ 7.75	Majunga..... 7. @ 7.70
Cassamance, A M... 6.70@ 6.80	Niggers..... 4.50@ 5.25
Lahou cakes..... 8.35@ 8 55	New Caledonian... 8.50@ 9 25

[10 francs per Kilo=87½ cents per Pound.]

STOCKS SAME DATE.

Soudan twists.....kilos. 4000	Lahou..... kilos 1900
Ivory Coast..... 500	Java and Sumatra..... 1800
Senegal..... 800	Balata..... 2000
Cassamance..... 800	
Congo..... 1300	Total..... kilos 13,100

ARRIVALS DURING APRIL.

Soudan twists.....kilos. 54,358	Congo..... kilos. 3,300
Soudan niggers..... 20,280	Cassamance..... 8,930
Java and Sumatra..... 1,900	Rufisque..... 860
Conakry niggers..... 19,900	Balata..... 100
Lahou twists..... 11,250	
Lahou niggers..... 650	Total..... kilos 121,528

Arrivals January 1 to April 30, 1904. 437,561 kilos

Arrivals same months, 1903..... 376,792 "

R. HENRY.

London.

EDWARD TILL & CO. [May 2] report stocks:

	1904.	1903.	1902
LONDON { Pará sorts..... tons —	—	—	—
{ Borneo..... 9	13	126	
{ Assam and Rangoon... 5	4	35	
{ Other sorts..... 225	192	458	
Total..... 239	209	619	
LIVERPOOL { Pará..... 495	1681	2245	
{ Other sorts..... 910	649	924	
Total, United Kingdom..... 1644	2539	3788	
Total, April 1..... 1367	2525	3326	

PRICES PAID DURING APRIL.

	1904.	1903.	1902
Pará fine, hard.. . . 4/ 6¼@4/ 9	3/ 9½@3/10¾	3/ @3/1½	
Do soft..... 4/ 5¼@4/ 7¼	3/10 @3/10¾	3/0½@3/1½	
Negroheads, scrappy.. 3/ 6¼@3/ 8½	3/ 0½@3/ 1½	2/6 @2/6¾	
Do Cametá.. 2/10 @2/11½	2/ 7¾@2/ 9	2/2¾@2/3¼	
Bolivian..... 4/ 7 @4/ 9		3/2	

MAY 13.—The market for Pará has been firm, and a good business has been done at dearer rates. Fine hard on the spot and distant delivery has been sold at 4s. 10d. @ 4s. 10½d., and fine soft cure, which is scarce, at 4s. 9d @ 4s. 9¼d. for near delivery. Negroheads: Manáos scrappy in good demand, with fair sales on spot and forward at 3s. 9d. @ 3s. 9¼d. Cametá and Islands scarce; the former sold at 2s. 11d. and the latter quoted 2s. 10½d. Peruvian in good demand and dearer; fair sales of ball, spot and near, 3s. 5d. and July-August delivery 3s. 5½d. Mollendo dearer; sales fine at 4s. 8½d @ 4s. 9d. spot and 4s. 8½d. forward.

At to-day's auction Colombian good clean sheet sold at 3s. 3¼d.; rather mixed, 3s. 1d. @ 3s. 1½d.; fair gray sheet, 3s. 1¼d. Central American: Good clean black roll and brown scrap, 3s. 4½d. Manga-beira: Fair to good Rio sheet 2s. 8½d. Manicoba: Good clean Bahia, 3s. 0¾d. Madagascar: Majunga, 2s. 4¼d. @ 2s. 5d. Mozambique: Fair Lamu ball, 3s. 6¼d.; Uganda strips, 3s. 4½d.

Ceylon.—Thirty cases offered and sold, fine thin biscuits from Pará seed at 5s @ 5s. 2½d. [—\$1.26¾]; good to fine clean scrap at 4s. 6d. @ 4s. 7d. — Straits Settlements: Fine packages offered and sold, fine thin large biscuits from Pará seed at 5s. 3½d.; scrap at 4s. 1d.

Liverpool.

WILLIAM WRIGHT & CO. report [May 2]:

Fine *Pará*.—At the beginning of the month [April] there was a sharp decline of 1½d. per pound, but since then prices have advanced 2½d. per pound, closing at 4s. 9d. for hard and 4s. 8d. for soft. This reaction has been partly caused by "bear covering," and also by a reduced estimate of receipts. The demand on the whole has been dull, doubtless due to the high prices ruling, which are higher than they have been for twenty years. Manufacturers continue to buy sparingly, which is the only safe policy to pursue. Stocks are light (although including Continental ports they were under-declared last month by about 400 tons) and are well held. For the present we cannot see any chance of a serious break in prices.

Rubber Receipts at Manaos.

DURING April and the first ten months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	APRIL.			JULY-APRIL.		
	1904.	1903.	1902.	1904.	1903.	1902.
Rio Purús—Acre..... tons	360	452	399	5525	5492	6313
Rio Madeira.....	84	86	115	2528	2160	2694
Rio Jurua.....	348	238	257	3459	3393	3451
Rio Javary—Iquitos... .	23	58	3	2206	1473	1213
Rio Solimões.....	73	37	58	808	1305	1508
Rio Negro.....	38	96	39	422	635	356
Total.....	926	967	871	14,948	14,458	15,535
Caucho.....	408	619	394	3168	2758	2787
Total.....	1334	1586	1265	18,116	17,216	18,322

Gutta-Percha.

WEISS & Co. (Rotterdam) report exports from Singapore for the first three months of five years:

	1900.	1901.	1902.	1903.	1904.
Tons... ..	1627	1443	1180	883	607

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

MAY 3.—By the steamer *Polycarp*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
United States Rubber Co.	117,800	14,400	47,500	61,400=	241,100
Poel & Arnold.....	46,000	17,900	38,600	....=	102,500
New York Commercial Co.	44,200	7,400	44,900	....=	96,500
A. T. Morse & Co.....	27,000	18,500	13,100	1,300=	64,900
Lawrence Johnson & Co.	18,800	14,700	10,000	19,100=	62,600
William Wright & Co....	25,000	2,200	14,800	2,900=	44,900
Edmund Reeks & Co....	....	....	....	14,700=	14,700
G. Amsinck & Co.	6,300	....	800	....=	7,100
Czarnikow, McDougal & Co.	19,400	4,000	60	....=	24,000
Lionel Hagenaers & Co..	3,700	....	1,600	....=	5,300
Hagemeyer & Brunn....	3,400	700	200	....=	4,300
Total.....	311,600	79,800	177,100	99,400=	667,900

MAY 14.—By the steamer *Cearense*, from Manáos and Pará:

United States Rubber Co.	74,700	17,200	37,500	88,300=	217,700
A. T. Morse & Co.	111,600	11,200	67,400	....=	190,200
Poel & Arnold.....	83,800	12,500	61,700	800=	158,800
William Wright & Co....	28,800	3,000	28,900	....=	60,700
New York Commercial Co.	11,100	2,500	18,100	....=	31,700
Hagemeyer & Brunn....	7,200	1,000	2,200	900=	11,300
Czarnikow, McDougal & Co.	6,800	3,200	300	....=	10,300
Edmund Reeks & Co....	800	....	....	6,800=	7,600
Lionel Hagenaers & Co..	4,100	....	2,400	....=	6,500
Total	328,900	50,600	218,500	96,800=	694,800

MAY 24.—By the steamer *Gregory*, from Manáos and Pará:

Poel & Arnold.....	61,300	14,400	52,400	34,100=	162,200
A. T. Morse & Co.....	31,400	6,900	61,700	52,000=	152,000
United States Rubber Co.	45,300	10,300	13,700	600=	69,900
William Wright & Co....	16,800	3,600	10,900	....=	31,300
New York Commercial Co.	10,400	2,200	15,300	1,700=	29,600
Thomsen & Co.....	4,400	....	2,400	....=	6,800
L. Hagenaers & Co.....	3,900	....	1,400	....=	5,300
Hagemeyer & Brunn....	2,400	1,000	1,700	....=	5,100

Total. 175,900 38,400 159,500 88,400= 462,200

[NOTE.—The steamer *Dominic*, from Pará, due at New York on June 4, carries 100 tons of Rubber and 45 tons of Caucho.]

PARA RUBBER VIA EUROPE.

	POUNDS.
APR. 25.—By the <i>Etruria</i> =Liverpool:	
Poel & Arnold (Coarse)	22,500
APR. 26.—By the <i>Finkland</i> =Antwerp:	
George A. Alden & Co. (Fine).....	13,500
MAY 11.—By the <i>Kronland</i> =Antwerp:	
A. T. Morse & Co. (Fine).....	11,000
Poel & Arnold (Coarse).....	7,000
MAY 11.—By the <i>S. q. rance</i> =Mollendo:	
Chicago Bolivian Rubber Co. (Fine).....	2,000
MAY 13.—By the <i>Cedric</i> =Liverpool:	
Poel & Arnold (Coarse).....	15,500
MAY 14.—By the <i>Campania</i> =Liverpool:	
Poel & Arnold (Cauchó)	7,500
MAY 16.—By the <i>Minneapolis</i> =London:	
Rubber Trading Co. (Coarse).....	5,500
MAY 23.—By the <i>Etruria</i> =Liverpool:	
Poel & Arnold (Cauchó).....	56,000
George A. Alden & Co. (Fine).....	11,500
MAY 24.—By the <i>Finland</i> =Antwerp:	
George A. Alden & Co. (Fine).....	13,500
George A. Alden & Co. (Coarse).....	2,200

Isaac Brandon & Bros	500
R. G. Barthold	300
Silva, Busschius & Co.	200
MAY 5.—By the <i>Virgil</i> =Bahia:	
J. H. Rossbach & Bros	35,000
Hirsch & Kaiser	8,500
MAY 9.—By the <i>Vigil</i> =Mexico:	
E. Steiger & Co.	3,000
Harburger & Stack	3,500
Fred. Probst & Co.	3,000
H. Marquardt & Co.	2,500
E. N. Tibbals & Co.	1,000
Graham, Hinkley & Co.	1,000
James Bondy Sons	500
Isaac Kubie & Co.	300
MAY 9.—By the <i>Princes</i> =New Orleans:	
A. T. Morse & Co.	12,000
G. Amstine & Co.	3,500
Egger & Heinlein	1,100
MAY 10.—By the <i>Highway</i> =Greystown, etc.:	
A. D. Straus & Co.	8,000
E. B. Strout	1,200
Andreas & Co.	1,000
Isaac Brandon & Bros	1,400
American Trading Co.	1,200
Graham Hinkley & Co.	700
Roldan & Van Sickle	700
D. A. De Lima & Co.	300
MAY 11.—By the <i>Saguna</i> =Colon:	
Hirzel, Feltman & Co.	17,800
Alberto Dumarest	2,600
A. Santos & Co.	1,500
Roldan & Van Sickle	1,300
G. Amstine & Co.	1,300
Livingstone & Co.	1,000
Meyer Hecht	1,000
A. Rosenthal & Sons	900
American Trading Co.	600
Kunhardt & Co.	500
Smithers, Nordenholt & Co.	700
R. G. Barthold	400
W. R. Grace & Co.	500
A. N. Rotholz	300
MAY 13.—By the <i>Cedric</i> =Liverpool:	
Poel & Arnold.....	5,700
MAY 13.—By the <i>Patricia</i> =Hamburg:	
Poel & Arnold.....	3,500
MAY 16.—By the <i>Cedric</i> =Truxillo, etc.:	
Egger & Heinlein	9,000
A. S. Lascellias & Co.	300
H. W. Peabody & Co.	300
MAY 16.—By the <i>March</i> =Bahia:	
Hirsch & Kaiser.....	34,000
MAY 16.—By the <i>Nimara</i> =Mexico:	
H. Marquardt & Co.	1,500
Samuels & Cummings.....	700
Graham, Hinkley & Co.	500
American Trading Co.	500
MAY 18.—By the <i>Alliance</i> =Colon:	
Meyer Hecht.....	6,500
Hirzel, Feltman & Co.	6,400
G. Amstine & Co.	2,000
Isaac Brandon & Bros	2,300
Jacquin Ferro	1,500
Isaac Kubie & Co.	1,000
Egger & Heinlein	900
Kunhardt & Co.	800
Roldan & Van Sickle	300
D. A. De Lima & Co.	200
C. Wessels & Co.	300
MAY 20.—By the <i>El Mar</i> =New Orleans:	
A. T. Morse & Co.	3,500
Manhattan Rubber Mfg. Co.	1,000
A. N. Rotholz	1,500
MAY 21.—By the <i>Tommy</i> =Bahia:	
J. H. Rossbach & Bros	40,000
A. D. Hitch & Co.	6,700
Egger & Heinlein	2,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

	POUNDS.
APR. 25.—By the <i>Cedric</i> =Liverpool:	
J. H. Rossbach & Bros	17,300
APR. 25.—By the <i>Monterey</i> =Mexico:	
Harburger & Stack	6,700
H. Marquardt & Co.	3,500
E. N. Tibbals & Co.	1,200
L. N. Chemedlin & Co.	1,300
E. Steiger & Co.	1,000
James Bondy Sons	300
For Hamburg.....	9,500
APR. 25.—By the <i>Etruria</i> =Liverpool:	
Poel & Arnold.....	15,000
APR. 26.—By the <i>Altai</i> =Greystown, etc.:	
E. B. Strout.....	3,300
G. Amstine & Co.	3,200
Isaac Brandon & Bros	800
C. Wessels & Co.	700
Roldan & Van Sickle	500
D. A. De Lima & Co.	600
Kunhardt & Co.	1,500
APR. 30.—By the <i>Lucania</i> =Liverpool:	
Hirsch & Kaiser.....	15,500
J. H. Rossbach & Bros	13,900
APR. 27.—By the <i>Yucatan</i> =Colon:	
Meyer Hecht	10,500
Hirzel, Feltman & Co.	5,500
Piza Nephews & Co.	5,000
Alberto Dumarest	1,300
A. Santos & Co.	2,400
Lawrence Johnson & Co.	1,800
Roldan & Van Sickle	1,600
Isaac Brandon & Bros	1,600
A. Rosenthal & Sons.....	1,200
G. Amstine & Co.	2,300
W. Loalza & Co.	1,000
Egger & Heinlein.....	600
Livingstone & Co.	500
Mecke & Co.	200
APR. 30.—By the <i>Esperanza</i> =Mexico:	
E. Steiger & Co.	3,000
H. Marquardt & Co.	2,500
For Hamburg.....	4,500
For Liverpool.....	6,700

MAY 2.—By the <i>Seneca</i> =Mexico:	
H. Marquardt & Co.	1,500
Graham, Hinkley & Co.	700
Samuels & Cummings.....	500
For London, etc	11,200
MAY 2.—By the <i>Comus</i> =New Orleans:	
A. T. Morse & Co.	4,500
Manhattan Rubber Mfg. Co.	3,000
A. N. Rotholz	1,500
A. S. Lascellias & Co.	500
MAY 4.—By the <i>City of Washington</i> =Colon:	
Hirzel, Feltman & Co.	4,100
A. D. Straus & Co.	3,800
G. Amstine & Co.	4,000
Kunhardt & Co.	2,500
Lawrence Johnson & Co.	2,000
American Trading Co.	2,500
Meyer Hecht	2,300
Piza, Nephews & Co.	1,200
Livingstone & Co.	1,600
Banco de Exportazos	1,300
Mecke & Co.	900
C. Wessels & Co.	700
Andreas & Co.	500

	POUNDS.
APR. 25.—By the <i>St. Louis</i> =London:	
United States Rubber Co	18,000
APR. 25.—By the <i>Arabic</i> =Liverpool:	
George A. Alden & Co.	22,000
Rubber Trading Co.	11,000
APR. 24.—By the <i>Etruria</i> =Liverpool:	
United States Rubber Co	22,000
A. T. Morse & Co.	11,000
Earle Brothers	1,600
APR. 26.—By the <i>Finland</i> =Antwerp:	
A. T. Morse & Co.	59,000
Joseph Cantor.....	23,000
APR. 27.—By the <i>Oceanic</i> =Liverpool:	
United States Rubber Co	34,000
Poel & Arnold.....	11,000
A. T. Morse & Co.	10,000
APR. 30.—By the <i>Lucania</i> =Liverpool:	
Poel & Arnold.....	20,000
A. T. Morse & Co.	13,000

AFRICANS.

MAY 2.—By the <i>Bulgaria</i> =Hamburg:	
A. T. Morse & Co.	104,000
Poel & Arnold.....	107,000
MAY 2.—By the <i>Armenian</i> =Liverpool:	
George A. Alden & Co.	66,000
Henry A. Gould Co.	2,000
MAY 3.—By the <i>Vaderland</i> =Antwerp:	
George A. Alden & Co.	1,000
Rubber Trading Co.	12,000
A. T. Morse & Co.	20,000
Robinson & Tallman.....	11,000
Joseph Cantor.....	7,000
Poel & Arnold.....	6,000
MAY 5.—By the <i>Teutonic</i> =Liverpool:	
United States Rubber Co.	14,000
George A. Alden & Co.	11,500
A. T. Morse & Co.	4,000
MAY 9.—By the <i>Umbria</i> =Liverpool:	
A. T. Morse & Co.	22,000
United States Rubber Co.	31,000
MAY 13.—By the <i>Georgie</i> =Liverpool:	
A. T. Morse & Co.	12,000
MAY 10.—By the <i>Frederic</i> =Bordeaux:	
George A. Alden & Co.	18,000
A. T. Morse & Co.	15,000
MAY 11.—By the <i>Kronland</i> =Antwerp:	
Poel & Arnold.....	23,000
Rubber Trading Co.	15,000
A. T. Morse & Co.	10,000
MAY 13.—By the <i>Cedric</i> =Liverpool:	
Poel & Arnold.....	12,000
A. T. Morse & Co.	9,000
Earle Bros.	1,500
MAY 13.—By the <i>Patricia</i> =Hamburg:	
A. T. Morse & Co.	20,000
Poel & Arnold.....	5,000
George A. Alden & Co.	6,900
MAY 16.—By the <i>Philadelphia</i> =London:	
George A. Alden & Co.	7,000
United States Rubber Co.	7,500
MAY 17.—By the <i>Rygham</i> =Rotterdam:	
Joseph Cantor.....	7,000
MAY 19.—By the <i>Majestic</i> =Liverpool:	
United States Rubber Co.	69,000
Poel & Arnold.....	2,500
George A. Alden & Co.	4,000
MAY 23.—By the <i>Arabic</i> =Liverpool:	
A. T. Morse & Co.	13,500

EAST INDIAN.

	POUNDS.
MAY 2.—By the <i>Saguna</i> =Calcutta:	
J. H. Recknagel & Son.....	3,000
MAY 2.—By the <i>Bulgaria</i> =Hamburg:	
A. T. Morse & Co.	2,000
MAY 9.—By the <i>Florida</i> =Calcutta:	
Ralli Brothers.....	9,000
MAY 9.—By the <i>St. Paul</i> =London:	
Poel & Arnold.....	16,000
MAY 16.—By the <i>Philadelphia</i> =London:	
Poel & Arnold.....	15,000
MAY 16.—By the <i>Minneapolis</i> =London:	
Robert Brans & Co.	28,000
Poel & Arnold.....	2,000
MAY 17.—By the <i>Swazi</i> =Calcutta:	
J. H. Recknagel & Son.....	7,000
MAY 21.—By the <i>St. Louis</i> =London:	
Poel & Arnold.....	9,000
MAY 23.—By the <i>Arabic</i> =Liverpool:	
Rubber Trading Co.	8,500

GUTTA-PERCHA AND BALATA.

	POUNDS.
MAY 2.—By the <i>Bulgaria</i> =Hamburg:	
To order	13,500
George A. Alden & Co.	3,000
MAY 10.—By the <i>Minch</i> =London:	
To order.....	3,000
Kempshall Manufacturing Co.	1,500
MAY 13.—By the <i>Patricia</i> =Hamburg:	
To order.....	22,000
BALATA.	
APR. 25.—By the <i>Caracas</i> =La Guayra:	
Kunhardt & Co.	15,500
American Trading Co.	1,500
MAY 2.—By the <i>Germanie</i> =London:	
Henry A. Gould Co.	4,000
Mineralized Rubber Co.	2,000

MAY 2.—By the *Parina*=Demerara:

George A. Alden & Co	5,000	
MAY 16.—By the <i>Philadelphia</i> =London:		
Henry A. Gould Co.....	7,000	
Earle Brothers	2,000	9,000

Exports:

India-rubber	14,956	\$ 11,318
Reclaimed rubber	86,239	9,706
Rubber Scrap Imported.....	1,184,901	\$ 61,860

BOSTON ARRIVALS.

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—APRIL.

Imports:	POUNDS.	VALUE.
India-rubber	4,859,652	\$3,535,863
Gutta-percha.....	39,849	10,863
Gutta-jelutong (Pontianak) ..	876,813	26,206
Total.....	5,776,314	\$3,572,932

APR 1.—By the *Lancastrian*=London:
Poel & Arnold—African.....APR 12.—By the *Sachem*=Liverpool:
George A. Alden & Co.—Central....APR 13.—By the *Anglian*=London:
George A. Alden & Co.—Coarse Pará.

POUNDS	
2,265	
10,172	
9,331	
Total.....	52,399
[Value, \$32,892]	

APRIL EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Comok, Schrader & Co.....	24,779	3,545	99,136	385	127,845	51,850	6,630	35,449	35,597	129,526	257,371
Frank da Costa & Co.....	61,554	14,351	127,174	—	203,079	20,296	1,668	23,068	300	44,732	247,811
Adelbert H. Alden.....	46,380	10,043	48,821	1,451	107,295	14,590	2,440	10,100	15,122	42,252	149,547
J. Marques & Co.....	9,020	656	12,113	—	21,789	18,776	841	13,892	—	33,509	55,298
R. Suarez & Co.....	32,387	10,621	1,836	—	44,844	5,603	2,423	160	—	8,276	53,120
Neale & Staats.....	—	—	948	20,212	21,160	168	—	316	30,075	30,559	51,719
Singlehurst Brocklehurst & Co	2,574	170	1,920	—	4,664	23,128	8,009	5,980	—	37,117	41,781
Kanthack & Co.....	20,767	10,501	5,015	—	36,283	4,573	—	—	—	4,573	40,856
Denis Crouan & Co.....	9,219	835	16,422	—	26,476	—	—	—	—	—	26,476
Pires, Teixeira & Co.....	7,564	—	3,988	—	11,552	—	—	—	—	—	11,552
B. A. Antunes & Co.....	2,933	1,530	3,705	390	8,558	—	—	—	—	—	8,558
Direct from Manaós.....	452,023	95,817	142,026	126,975	817,741	256,940	32,419	93,269	200,754	583,391	1,401,132
Direct from Iquitos.....	1,062	179	1,050	3,744	6,035	11,703	2,196	6,636	187,229	207,924	213,859
Total for April.....	670,262	148,848	465,051	153,157	1,437,321	407,786	56,026	188,870	469,077	1,121,759	2,559,080
Total July-March.....	6,510,690	1,338,468	4,194,448	636,173	12,679,788	6,878,741	843,997	2,206,420	2,269,878	12,199,036	24,878,824
TOTAL SINCE JULY 1, 1903	7,180,951	1,487,316	4,659,502	789,330	14,117,109	7,286,527	900,023	2,395,290	2,738,055	13,320,795	27,437,904

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
March, 1904.....	9,124,462	435,899	8,688,563	March, 1904.....	6,523,104	3,281,936	3,241,168
January-February.....	14,141,887	473,346	13,668,541	January-February.....	10,066,112	6,837,494	3,228,618
Three months, 1904.....	23,266,349	909,245	22,357,104	Three months, 1904.....	16,589,216	10,119,430	6,469,786
Three months, 1903.....	16,197,808	868,965	15,328,843	Three months, 1903.....	15,690,304	9,881,648	5,808,656
Three months, 1902.....	14,505,944	940,675	13,565,269	Three months, 1902.....	13,880,608	7,175,616	6,704,992
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
March, 1904.....	3,044,360	1,116,060	1,928,300	March, 1904.....	127,380	3,520	123,860
January-February.....	6,144,820	2,033,680	4,111,140	January-February.....	320,100	22,440	297,660
Three months, 1904.....	9,189,180	3,149,740	6,039,440	Three months, 1904.....	447,480	25,960	421,520
Three months, 1903.....	9,451,640	3,483,260	5,968,380	Three months, 1903.....	341,220	25,960	315,260
Three months, 1902.....	7,036,700	2,682,020	4,354,680	Three months, 1902.....	370,260	42,460	327,800
FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
March, 1904.....	2,409,880	1,536,040	873,840	March, 1904.....	233,860	7,260	226,600
January-February.....	3,561,800	2,288,220	1,273,580	January-February.....	535,480	3,080	532,400
Three months, 1904.....	5,971,680	3,824,260	2,147,420	Three months, 1904.....	769,340	10,340	759,000
Three months, 1903.....	3,837,680	2,101,880	1,735,800	Three months, 1903.....	742,660	8,800	733,860
Three months, 1902.....	5,305,300	2,030,160	3,275,140	Three months, 1902.....	642,620	660	641,960
BELGIUM.†							
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.				
March, 1904.....							
January-February.....							
Three months, 1904.....							
Three months, 1903.....	3,536,883	2,562,087	974,796				
Three months, 1902.....	4,355,100	2,299,453	2,055,656				

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canada consumption.

* General Commerce.

† Special Commerce

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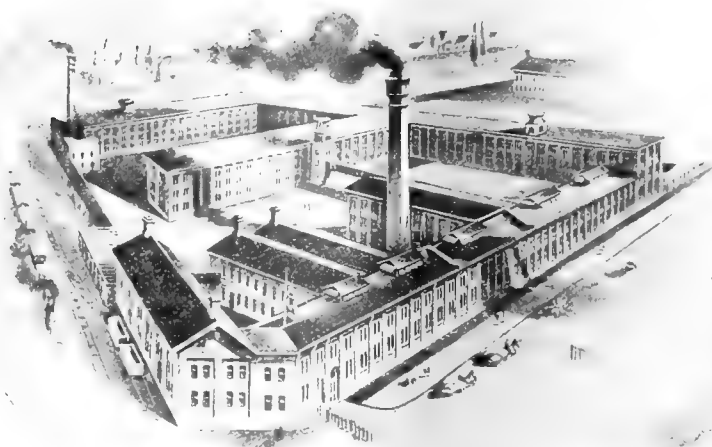
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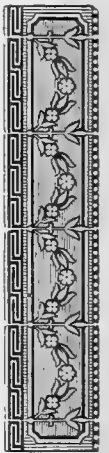
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A CONSUL ON RUBBER PLANTING.

A REPORT entitled "Rubber Culture in Mexico," signed by Edward M. Conley, "vice and deputy consul general" at Mexico City, and published by the government at Washington under date of June 14, 1904, will doubtless have a good effect in strengthening the demand for a higher standard of efficiency in the consular service. The first effect, however, will be to discredit, in the minds of uninformed readers, the work of many honest citizens of the United States, who have invested much money in Mexico, in a branch of planting enterprise for which there is a pressing demand, and which promises profitable returns so long as the world needs rubber.

Mr. Conley's excuse for his report is the large number of letters of inquiry received at his consulate "on the subject of rubber culture in Mexico." Such letters deserve to be answered, and, in view of the importance of the subject to American citizens, the government should be represented in Mexico by a consul informed by personal observation in regard to what is being attempted in the way of rubber planting there, and the results to date. Instead of which we have here about 2000 words of opinions by a consul who lacks the courage to write: "I know nothing of the subject."

To illustrate the character of the Conley report, a few paragraphs may be introduced here, with the remark that, while they may have been written in all sincerity by the consul, this fact does not justify the distribution of the report by the government without giving it any editorial supervision. Here is a specimen opinion:

Theoretically, rubber culture is a very alluring proposition, but thus far it has never yielded any practical results. It was experimented with for years in other countries before its cultivation was undertaken in Mexico, and, according to a recent report of the United States department of agriculture, the experiments have always been failures. [The title of this report, and the chapter and page, are not given.—THE EDITOR.] There is as yet no good reason to believe that its cultivation in Mexico will prove any more successful than it has in other countries.

If rubber cultivation in Mexico proves one half as successful as on the older plantations in the Far East visited recently by the Editor of THE INDIA RUBBER WORLD, the planters there will have no reason to feel disappointed. Moreover, there are plantations in Mexico as well advanced now as were any in Ceylon at the same age. Again, the consul writes:

The cultivation of rubber is based upon the supposition that the supply of wild rubber will one day be exhausted or greatly curtailed, but this hypothesis is entirely uncertain. The regions from which the supply now comes are still largely unexplored, geographically and botanically, and the discovery of new areas of rubber bearing vegetation and of new rubber producing species is not infrequent and may continue for many years. Moreover, the progress of science may enable the extraction of rubber from juices not now utilized, and the discovery of such a process might change the entire aspect of the rubber industry. There is always the possibility, also, of the discovery of a substitute for rubber, such as its synthetical manufacture from turpentine, which has been experimented with. Thus a slight increase in chemical knowledge might at any time change the whole situation.

It is not safe to be too positive about what will not happen in future. When the north pole is discovered it may prove to be the gateway to millions of tons of fine Pará

rubber, stored away in the center of the earth, and may Mr. Conley be there to report on it! But the world needs rubber *now*, in more plentiful supplies than any known forest areas can be made to furnish, and without waiting until now unknown countries or islands are discovered, or unknown chemists arise and produce substitutes. And if Mr. Conley is so hopeful in regard to these possibilities, why not allow the possibility that millions of rubber trees now planted may in a few years be yielding as liberally as many thousands of trees on plantations are already doing?

Consul Conley refers to "fake rubber plantation companies", and it does not appear from his report that there are rubber plantations of any other kind, in Mexico or elsewhere. Indeed, he asserts:

The first experiments in rubber culture were naturally made with the Para rubber tree, the one best known. It was planted in regions which were apparently exact duplicates of those where the wild tree grows, but for some reason the experiments were absolute failures. A number of experiments were made in different countries with various rubber producing species, all with a like result.

There are so called rubber planting companies whose methods cannot be condemned too strongly. There are also "fake" gold mining companies, but the United States government does not for this reason issue official declarations that gold cannot be mined. The only mitigating circumstance about the Conley report is that it can hardly nullify the work of the national department of agriculture, the reports of which on rubber culture are attracting attention around the world and affording encouragement to legitimate planting interests.

THE RUBBER INDUSTRY OF AUSTRIA is confronted by conditions which are neither new nor peculiar to that country. The home demand for goods is not large enough for the factory capacity, or to afford satisfactory returns on the capital invested, while the tariff barriers in many directions impede export trade. To make matters worse, the high cost of raw materials cannot be compensated for by advancing the price of manufactured goods. The Austrian remedy for these conditions, however, is new, or at least it is proposed to carry out the remedial policy to a greater extent than has been attempted in any other country. The manufacturers have created a central board of control, to regulate production and prices, and placed themselves under bonds to respect the agreement which they have signed to be guided by this secret agency. It happens that the Austrian rubber industry is in the hands of a few concerns, and that its development is at a slow rate, which conditions render concert of action easier than in a country like the United States, with hundreds of factories, large and small, and new ones springing up every year. The total imports of crude rubber into the empire for 1903 amounted to only 2,757,480 pounds, of the value of \$1,782,410, and the control of a business of this extent ought not to prove difficult. But what may prove a most inconvenient feature is the fact that some of the Austrian rubber factories are branches of German establishments, of such importance that the German proprietors had to be included in the *Kartel*, and on their own terms. That is, they objected to the forms of Austrian law, and dictated that the headquarters of the combination should be in Berlin. Austrian factories have never yet been able to supply the home demand for rubber goods against foreign competition, the imports for 1903 amounting to \$2,801,329 in value, against exports of only \$2,292,657. Largely more than half the imports come from

Germany, and, as has been intimated, a considerable portion of the home production is in German hands. Now that the actual control of even the Austrian owned factories has been removed to Berlin, and funds deposited there, as evidence of the good faith of the Austrian parties to the new agreement, it looks very much to an outsider as if the rubber industry of that country is under too many restrictions to grow any, even if the result of the *Kartel* should be to stop the further loss of money.

NOT SO LONG AGO it was asserted that an ocean cable could not be built in the United States, because—well, because none had been built here, or because the English cable makers had gained such a start that they would always keep the lead. This view seemed strengthened when the German Atlantic cable company placed the order for their first cable with an English works. But the past month has seen the opening of their second Borkum-New York cable, made in Germany, within less than two years, and in a factory which had never before turned out a deep sea cable. So long as the new cable holds out to work it will be evidence that success in any industry is not confined necessarily to any geographical limits, or monopolized by the first concerns to become established in it.

THERE IS BITTER RESENTMENT IN UTAH. To be more definite, it lies deep in the heart of Mr. William Sunderland, a citizen of Utah, who claims to be the only true original discoverer of the "rubber weed" in his state, though the honor is claimed for others. Mr. Sunderland writes to the newspapers that he believes "a personal agency" to be at work to deprive him of credit for the discovery, and it would not be surprising if he should do something about it. But things might be worse with Mr. Sunderland. Suppose, for instance, his enemy were impersonal; it might be much harder to deal with.

ONE OF THE CONGO RUBBER TRADING COMPANIES is reported to have set aside some of its profits for last year, to be invested in a plantation of *Hevea* rubber in the Malay states. Does this foreshadow the beginning of the end of large yields and large profits in King Leopold's rubber regions? The company referred to, by the way, is expected to pay a dividend this year of only 100 per cent. as against 420 per cent. a few years ago.

AN OCEAN CABLE "MADE IN GERMANY."

THE laying of the second German cable from Borkum, in the North sea, to New York, via the Azores, was completed on June 2, the final splice being made off Fayal. Like the first cable, laid in 1900, it is owned by the Deutsch-Atlantische Telegraphen-Gesellschaft (Cologne), with close connections with the Commercial Cable Co. (New York). The length of the route is 4142 nautical miles. The first cable, however, was built and laid by the Telegraph Construction and Maintenance Co., Limited (London), Germany at that time being without facilities for such work. But the second cable was built at Nordenham on the Weser, by the Norddeutsche Seekabelwerke Actiengesellschaft, and laid by its 5000 ton cable steamer *Stephan*, which is also a German production. The contract was signed for the new cable on May 31, 1902, and work was begun on it in July, so that its completion required less than two years.

The German government is now discussing plans for cables to connect their Pacific possessions, and appears likely to become an important factor in the extension of submarine telegraphy.

REDUCED TAX ON ACRE RUBBER.

THE United States consul at Pará, Brazil—Colonel Louis H. Aymé—reported under date of May 10:

"Until lately the state of Amazonas has imposed an export tax on all rubber coming into its jurisdiction from up the Amazon river. Now the Federal government has erected Acre into a territory which is to be governed by the Federal government. Naturally, all the revenues therefrom will be collected and used by the Federal government. The export tax has been reduced from 20 per cent. of the declared value to 15 per cent., and the owner or purchaser of rubber grown outside of the state of Amazonas is at liberty to ship his rubber from Manáos or Pará, as he pleases.

"The amount of rubber affected by the new regulation is estimated at not less than 7000 tons. Of this quantity, it is believed that 5000 tons will come to Pará. Five thousand tons of rubber are worth about \$9,000,000, and it will be seen, therefore that this will mean a considerable increment to the business activity of this city, which has declined a good deal in the last few years, while it will mean a corresponding diminution of the importance of Manáos.

"I do not believe that the reduction in value in the export tax will affect the invoice of foreign price of rubber; if anyone profits thereby, it will be the rubber collector, or first seller. He may, and probably will, receive nearly all of the difference in tax in an enhanced price for his merchandise."

Under date of June 1, Kanthack & Co., of Pará, reported as follows, indicating a conflict of jurisdiction over the taxing of rubber from the Acre:

"In Manáos receivers have had to store 400 tons in consequence of a dispute, which has arisen between the state and the Central government, concerning duties which the latter claims, but the former refuses to acknowledge as pertaining to the higher authority, and until this question is settled the rubber cannot be disposed of." A later report said: "The rubber retained at Manáos by the State has been released, under protest against the Federal government."

The *Brazilian Review* (Rio Janeiro) of May 24 stated that the Amazonas state government at Manáos, where an export duty of 23 per cent. is imposed, had protested to the Federal government against a rate of only 15 per cent. being charged on rubber from the Acre district, on the ground that such policy would encourage the smuggling of rubber from Amazonas into the Acre territory. Hence the Federal minister of finance had decided that all rubber entering from the Purús or Juruá shall pay duties at the rate of 23 per cent., the excess of 8 per cent. to be refunded to the owner upon proof of the origin of his rubber in the Federal, or Acre, territory.

PROFITS ON CONGO RUBBER.

THE net profits for 1903 of the Société Anversoise pour le Commerce au Congo, based principally upon trading in rubber in the Congo Free State, were stated at the general meeting at Brussels, on June 6, to have been 2,095,897 francs [= \$404,508.12]. A dividend of 500 francs per share was declared. There are 3400 shares "without designation of value," though commonly reckoned at 500 francs each, one half the shares being held by the state. With the shares at 500 francs, the last dividend amounts to 100 per cent., which is double the rate for the preceding year. The operations of the company for the last two years have been:

	1902.	1903.
Caoutchouc collected.....kilos	476,250	366,200
Ivory collected.....	10,608	10,870

The Belgian journal, *La Chronique Coloniale*, announced recently that the Société A B I R, one of the large *concessionaire* trading companies dealing in Congo rubber, would declare a dividend, payable July 1, of 500 francs per share. This would be equal to 100 per cent. The *Chronique* mentions that the amount would have been greater, had the directors not considered it advisable to set aside a portion of the profits to take over an interest in a rubber plantation in the Malay states. Last year the dividend was reported in these pages at 850 francs per share. There are 2000 shares, of 500 francs each, one half owned by the Congo Free State. On May 6 these shares were quoted at 13,950 francs each; on May 1 last year, the figure was 15,350 francs; in 1901 there were sales as high as 28,925 francs, but the dividend then was over 400 per cent.

INDIA-RUBBER GOODS IN COMMERCE.

EXPORTS FROM THE UNITED STATES.

OFFICIAL statement of values for April, 1904, and the first ten months of five fiscal years, beginning July 1, from the treasury department at Washington:

MONTHS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
April, 1904.....	\$ 66,516	\$ 25,186	\$ 240,160	\$ 331,862
July-March.....	667,567	946,439	1,796,522	3,410,528
Total.....	\$734,083	\$971,625	\$2,036,682	\$3,742,390
Total, 1902-03...	680,147	983,044	1,881,773	3,544,964
Total, 1901-02...	514,470	939,671	1,437,099	2,891,240
Total, 1900-01...	448,085	662,971	1,432,124	2,543,180
Total, 1899-00...	430,220	329,686	1,133,094	1,902,000

DETAILS OF RUBBER FOOTWEAR EXPORTS.

	1899-1900.	1900-01.	1901-02.	1902-03.	1903-04.
Pairs exported....	597,614	1,349,063	2,367,611	2,153,127	2,117,043
Value.....	\$329,686	\$662,971	\$939,671	\$983,044	\$971,625
Average per pair..	55.1 c.	49.1 c.	39.7 c.	45.7 c.	45.9 c.

Exports of reclaimed rubber have been as follows, in value: \$508,639 for first ten months of this fiscal year; \$350,848 for same months of last year; \$318,711 for ten months of 1901-02.

GUTTA-PERCHA ROD FREE OF DUTY.

IN a decision written by Byron S. Waite, the board of General Appraisers [United States customs service] at New York, on April 12, sustained a protest by Connellan Brothers, of Boston, against the assessment of duty at 35 per cent. of an importation by the Kempshall Manufacturing Co., as manufactures of Gutta-percha. It was claimed by the importers to be free of duty, as "crude Gutta-percha." The decision reads:

- - - The article is Gutta-percha molded into cylindrical rods about an inch and a half in diameter, having a chocolate color, and was imported by the Kempshall Manufacturing Co. for use in the manufacture of golf balls. It appears from the evidence that the importing company ordered the goods as crude Gutta-percha; that while some of the impurities have evidently been removed, the product has to undergo further elaborate purifying processes before it is suitable for making golf balls. The importers testified that the form in which the goods are imported is rather a disadvantage than otherwise, and that, so far as their purposes are concerned, it does not differ in material from Gutta-percha in the form of rough slabs, which they also import. None of these facts were controverted at the hearing. Gutta-percha, partially cleaned or purified, has been hitherto held by the board to be crude Gutta-percha within the meaning of paragraph 570. - - - Upon the record in the case now before it and the evidence in the cases cited, the board is led to the conclusion that the merchandise in question is, for commercial purposes, crude Gutta-percha.

THE AUSTRIAN RUBBER TRUST.

JULY 1 is the date fixed for the going into effect of the "Kartel" (agreement) of the rubber manufacturers of Austria-Hungary, the negotiations for which have been in progress for some months past. To make the proposed combination effective, it was essential that the German companies having branch factories in Austria lend their aid, and this was refused on the ground that the laws of the latter country could not be invoked to guarantee the carrying out of the agreements of the combination. Hence it agreed finally to establish headquarters at Berlin, so that the affairs of the combination shall be subject to German law. All the factories coming under the provisions of the Kartel, therefore, have been required to deposit in Berlin bonds to guarantee the payment of any fines or penalties that may be imposed. A bureau of control, empowered to exercise a close scrutiny on the working of the Kartel, is located at Vienna, the members of which are pledged to secrecy. The general affairs of the combination are governed by an executive committee, composed of representatives of the Vereinigte Gummiwaaren-Fabriken Harburg-Wien (as chairman), the Oesterreichisch-Amerikanische Gummifabriks Aktiengesellschaft (vice chairman), and the firm Josef Reithoffer's Söhne, holding proxies of Josef Miskolczy & Co. and the Berlin-Frankfurter Gummiwaaren-Fabriken.

The board of control is to ascertain the amount of production of the various Austro-Hungarian rubber factories last year, and then to allot the relative proportion of goods to be produced by them under the new agreement. It is also proposed to regulate prices, which are now considered too low as compared with the cost of raw materials, though advances must necessarily be limited, in view of the fact that the Austrian tariff on imports does not now afford more than a moderate protection, especially against the competition of German factories. There will be, however, a minimum price named for the various articles of rubber manufacture, coming under the provisions of this agreement.

One of the objects of the combination is to specialize production in the various factories, with respect to leading articles of manufacture. For example, the Oesterreichisch-Amerikanische Gummifabriks Aktiengesellschaft can enter into an agreement with the Vereinigte Gummiwaaren-Fabriken Harburg-Wien, whereby the latter secures the exclusive manufacture in Austria-Hungary of rubber footwear, leaving to the former the production of tires. It is understood, however, that no binding agreements of this character have yet been entered into. Several articles, including rubber balls, are not intended to be covered by such agreements.

The Oesterreichische Aktiengesellschaft für Gummi-Industrie, which was founded by the Vienna Union Bank, has been bought by the combination, the funds being supplied *pro rata* by the members. The company will go into liquidation, but the factory will continue in operation. The company is capitalized at 1,600,000 crowns [= \$324,800], the Union bank holding half the shares. The bank is also the principal creditor, the indebtedness being 1,900,000 crowns [= \$385,700]. The purchase price was 1,050,000 crowns for the factory and 500,000 crowns for materials on hand. The capital for continuing the factory will be supplied by Vienna banks for account of the members of the combination.

The competition in the industry in Austria has been further lessened by the liquidation of the Prager Gummiwaren-Fabrik Aktiengesellschaft, at Vysocan, founded in 1897, and the factory of which has been acquired by Oesterreichisch-Amerikanische company.

NEW TRADE PUBLICATIONS.

THE DIAMOND RUBBER CO. (Akron, Ohio) have issued a new Mechanical Catalogue, which is particularly full and complete in its descriptions and illustrations of the rubber goods lines produced by this company. Besides, the contents of the catalogue are well arranged, and the typographical details have been excellently executed. [5"×7". 128 pages.] —Sections of this book are to be brought out as separate catalogues, each devoted to a single line, one of which, relating to Belting and Packing, has reached us. It embraces numerous practical hints on the selection of belts and their care when put in use. The Diamond company make belts specially adapted for conveyor use, the equipment of sugar factories, use in oil wells, and other industrial requirements. These are all suitably described, together with a varied list of packings, also specially fitted for particular requirements. Prices are given. [5"×7". 32 pages.]

BOSTON WOVEN HOSE AND RUBBER CO. (Cambridge, Massachusetts) issue a series of well arranged and well made catalogues, each devoted to a single line of their products in mechanical rubber goods, or to the accessory lines. The excellent illustrations and the succinct descriptive matter in these catalogues cannot fail to be most helpful to the company's customers, or to those who may contemplate becoming such. Three new catalogues of the series are entitled :

F Brass Fittings. (For Hose.)

H Mats and Matting.

L Insulating and Friction Tapes.

The Brass Fittings catalogue deserves special mention for the variety and evident character of couplings, nozzles, sprinklers, and the like that are listed in it. The catalogues are uniformly 5¼"×7¼". —Another list from the same house embraces Rubber Bath Brushes for toilet use, which are offered in great variety; an attractive booklet. [6¼"×4". 12 pages.]

ALSO RECEIVED.

THE Springfield Rubber Tire Co., New Haven, Connecticut. = [Descriptive price list of Springfield solid and cushion rubber tires.] 12 pages.

THE Akron Dental Rubber Co., Akron, Ohio. = Arthur C. Squires's Quick Curing Dental Rubber. [Price List.] 4 pages.

THE Allen Manufacturing Co., Toledo, Ohio. = The Allen Fountain Brush, Showing Portable Outfit in Use. Price List, June 1, 1904. 12 pages.

RUBBER EXPORTS FROM PERU.

THE British consul at Iquitos reports a growing interest in the rubber trade there, which is the chief basis of commercial life in the Peruvian departments having the Amazon for their outlet. He gives details of the exports of rubber for 1903, with the exception of what was shipped from the river Javary direct to Manáos, and the figures compare as follows with details for 1901 and 1902, printed in THE INDIA RUBBER WORLD of December 1 last :

GRADES.	1901.	1902.	1903.
Fine rubber. kilos	478,119	500,134	651,018
Entrefine.	44,282	29,504	45,294
Coarse.	269,075	194,216	266,466
Caucho slab.	69,094	79,115	57,967
Caucho ball.	517,322	630,263	951,188
Weak rubber.	4,019	8,636	18,052
Total. kilos	1,381,911	1,441,868	1,989,985

Exports from the Javary to Manáos are not stated for 1903; in 1901 the figure was 356,765 kilos, and in 1902 a little less—336,218 kilos.

CAREER OF THE LATE ELISHA S. CONVERSE.

DIED, at his residence in Malden, on Sunday, June 5, 1904, at 5.15 P. M., ELISHA S. CONVERSE, in his eighty fourth year.

ELISHA SLADE CONVERSE was born July 28, 1820, in Needham, Massachusetts, in the seventh generation descended from Deacon Edward Converse (an earlier spelling of the name), who settled at Charlestown, Mass., in 1630, and who "was a man of some wealth and considerable influence, of great strength and energy, as well as a rigid Puritan", as "is evidenced on nearly every page of colonial and town history, and continued to be so for 33 years after his arrival in this country" * from England. The same characteristics were perpetuated in the succeeding generations. The subject of this sketch was the son of Elisha Converse—for a time landlord over the taverns in Thompson, Connecticut, and keeper of the turnpike gates—who married Betsey Wheaton, of Thompson. The family lived for a few years at Needham, Mass., and later returned to Connecticut.

During his twelfth and thirteenth years Elisha Slade Converse worked for nine months in a cotton mill in the town of Thompson, and attended school three months. In April, 1833, he removed to Boston, and lived for a short time with his elder brother, James Wheaton Converse; he next lived with his sister, Mrs. Aaron Butler, in South Boston, assisting her husband in a general store; then returned to his parents and worked on a farm until he was 17. During all this time he attended school part of each year. At this age he was engaged for two years with Albert G. Whipple, at Thompson, Connecticut, to learn the clothier's trade, but before serving his full time he became a partner with Mr. Whipple; at the age of 22 he bought out the business and continued it on his own account. In 1843 he married Mary Diana Edwards,† the daughter of a leading citizen of the community.

In 1844 Mr. Converse removed with his wife to Boston and engaged in the wholesale shoe and leather business as a partner in Poland & Converse, later removing his residence to Stoneham, Mass., where the firm had a branch business—the "Red Mills"—in preparing dye stuffs, etc. The firm dissolved in 1849, and Mr. Converse formed a copartnership with John Robson to continue the business at the mill. In 1850 Mr. Converse removed to Malden, Mass. The next year the Malden bank was

organized, when he became one of the directors. In 1856 he was elected president of this bank, which office he continued to hold until the end of his life. During 1853 the firm of Converse & Robson was dissolved, and the senior member became interested in the rubber industry.

The rubber industry in Malden had its beginning about 1850, with the Edgeworth Rubber Co. They tried to find means of working rubber without sulphur, but unsuccessfully, and were finally sued for infringing the Goodyear patent and became insolvent. The leading spirit in that company, Gardiner Greene Hubbard, had employed Eben N. Horsford, professor of chemistry at Harvard College, to make some studies for him, and through the latter learned that Dr. F. Luedersdorff had published in Berlin in 1832 something on the use of sulphur in connection with rubber. The story runs that Hubbard threatened to make use of this fact—then almost unknown outside of Germany—in attacking the Goodyear and Hayward patents. At any rate a new company was formed, the Malden Manufacturing Co. being incorporated May 4, 1853, with \$200,000 capital, of which one half was represented by a license granted by the Shoe Associates. Gardiner G. Hubbard was president and James C. Dunn treasurer. Leverett Candee and Nathaniel Hayward were also on the board, and William Judson had an interest. The name of the company was changed by the Massachusetts general court May 7, 1855, to the Boston Rubber Shoe Co.

Elisha S. Converse was elected treasurer of the Malden company September 8, 1853. He stated to THE INDIA RUBBER WORLD at one time that no previous intimation had been given to him that he had been thought of for treasurer or having any connection with the company. No other Converse was connected with the

company until several years after, when his elder brother, James W. Converse, was elected a director. Bishop's "History of American Manufactures" says that the stockholders "induced Mr. E. S. Converse to relinquish his other business and devote his entire attention to the management of the affairs of the company, as buying and selling agent and as treasurer. Such confidence was placed in his ability that almost unlimited power was given him, and the result vindicated the wisdom and propriety of their course. - - - The dark days of 1857, which involved so many business firms of repute in insolvency, obscured, for a time, the rising company; and to add to their embarrassments, the price of raw material advanced enormously; but the temptation to tide over, by the



THE LATE ELISHA S. CONVERSE.

* Family Record of Deacons James W. Converse and Elisha S. Converse. Compiled by William G. Hill. Privately Printed. 1887.

† For a sketch of Mrs. E. S. Converse, see THE INDIA RUBBER WORLD, January 1, 1904—page 127.

use of inferior rubber, was withstood; the financial ability and resources of the treasurer carried the corporation safely through the crisis, and it came out of the trial with an established credit, and a manufacturing reputation second to none. For the first time in its history, dividends were paid to stockholders."

Under Mr. Converse's active and forceful management the Boston Rubber Shoe Co. made steady and uninterrupted progress until it became the largest establishment in the world of its kind, if not the largest in any department of the rubber industry. In a public address two years ago Colonel Samuel P. Colt mentioned that at one time the ambition of Mr. Converse had been to live to see the time when the daily production of his factory might reach 1000 pairs of rubber boots and shoes a day. The production, he said, had then grown to 55 000 pairs a day, and with an aggregate invested capital of \$350,000 the company had divided among the shareholders, under Mr. Converse's management, \$29,000,000. Mr. Converse remained treasurer of the company until 1895, when he relinquished the position to Lester Leland, his son in law. For a long period the office of president was held by his brother, James W. Converse, whose relation to the business, however, was mainly in an advisory capacity. After the death of the latter, the office of president was filled by E. S. Converse. Costello C. Converse, a son of James W., has been for some years vice president of the company, and a factor of weight in its management. The ownership of the business long ago passed into the hands of Mr. Converse and members of his family.

Mr. Converse at various times came to have an important connection with the rubber industry in other departments. He was president at one time of the Boston Belting Co. and had an interest in the Revere Rubber Co., the Easthampton Rubber Thread Co., and other concerns. He was also president of the Rubber Manufacturers' Mutual Insurance Co.

Mr. Converse was deeply interested in the growth of the city of Malden, to which he contributed in many ways. He was first mayor of the city, and donated to the public a liberally endowed free library, a hospital, and a park, in addition to his gifts to the Baptist church and the Young Men's Christian Association. He served two terms in each branch of the Massachusetts legislature, and was actively connected with various institutions of other than a business nature.

During the last two or three years Mr. Converse's declining health compelled his retirement from active life, and in December, 1903, he suffered a sore bereavement in the loss of his wife, after 61 years of married life. There were four children: Frank Eugene, who died in 1863; Harry Elisha, a director in the Boston Rubber Shoe Co; Mrs. Costello C. Converse, and Mrs. Lester Leland.

* * *

FUNERAL services were held from the First Baptist Church of Malden, on the afternoon of June 8. For two hours during the day the body lay in state in the church, and thousands viewed it. The memory of Mr. Converse was honored throughout the city. Many firms suspended business during the day; the schools and municipal offices were closed, and the streets in the business section were draped in mourning. The services at the church were conducted by the pastor, the Rev. Charles H. Moss, assisted by a former pastor, the Rev. Dr. Henry O. Hiscox, of Albany, N. Y., who delivered the eulogy, and the Rev. Dr. James F. Albion, of Portland, Me., former pastor of another Malden church, who offered prayer. The present and former city governments were represented, and the various institutions of Malden and Boston with which Mr. Converse had been identified, while many friends at a distance sent floral

tributes. Not only was the church crowded, but two thousand people stood in the streets, with bowed heads, while the services were in progress. The pall bearers were Frank B. Bemis, Boston; J. Eugene Cochrane, Dedham; F. H. Darling, Boston; Major Harry P. Ballard, Malden; Frederick T. Ryder, Malden; W. T. A. Norris, Melrose; Homer E. Sawyer, New York; and E. F. Smith, Malden. The interment was in the family lot at Woodlawn cemetery, Malden.

* * *

At a special meeting of the executive committee of the New England Rubber Club, held on June 8 to take action upon the death of Mr. Converse, the following resolutions were passed:

WHEREAS, God in His infinite wisdom has taken from us our friend and highly esteemed Honorary President, Elisha S. Converse, and, being desirous of paying tribute to his memory, we, the committee representing the members of the New England Rubber Club, hereby adopt the following resolutions:

Resolved.—That in the death of our Honorary President, this association has lost a valued friend and wise counselor.

Resolved.—That the rubber industry has been deprived of one of its earliest and most ardent supporters, and one who has been a shining example of an enlightened and honorable merchant.

Resolved.—That in the memory of his life, we have with us for all time an example of a pure and noble manhood, a firm determined character, a genial nature, always thoughtful and kindly to those about him.

Resolved.—That we extend to his family our appreciation of his high and noble character, and our sincere sympathy for them in their great loss.

L. D. APSLEY, President.

G. P. WHITMORE, Treasurer.

A. W. STEDMAN, Vice President. E. E. WADEROOK, Acting Secretary.

The Club was represented at the funeral by the four officers above named, and by Allen L. Comstock and John H. Flint, directors. The Club also sent a beautiful wreath of roses to the church.

The Boston Belting Co., of which Mr. Converse, at various times, was treasurer and president, attended the funeral in a body, and were represented by a floral tribute.

* * *

THE will of Mr. Converse, dated October 22, 1902, was filed for probate on June 9 at East Cambridge. The executors named are Colonel Harry E. Converse, his son; the Hon. John D. Long, late secretary of the navy; Moorfield Storey, and Frank B. Bemis. The value of the estate is estimated at \$10,000,000. To his wife Mr. Converse left \$1,000,000, but as she is deceased this will be added to the residuary estate. To each of the three children is given \$350,000. To the Malden Public Library, \$150,000 in trust, for the purchase of art works; First Baptist Church of Malden, \$15,000, in trust, for the poor; Malden Industrial Aid Society, \$25,000, in trust, for the day nursery; to the household servants, \$3000; to the Boston Rubber Shoe Co., \$10,000, in trust, for the benefit of poor employes; to the employes at the company's Boston store, \$4000; to Elisha E. Converse, a grandson, \$10,000; to various other relatives \$1000 each, for the purchase of a memorial of his affection; to Frederick T. Ryder, for many years Mr. Converse's private secretary, \$8000; to Howard S. Randall, former agent of the Boston Rubber Shoe Co. in New York, \$10,000; to Erskine F. Bickford, manufacturing agent of the company, and John Robson, of Melrose, \$5000 each, and Thomas Lang, of Malden, \$3000. There were also many bequests of personal belongings, besides bequests of land to members of the family, eventually to be used for public parks for Malden and Melrose. Of the residuary estate, one third of the principal is to be divided in 1910 among his children and their heirs, and the remainder in 1920 among their survivors.

RUBBER PLANTING IN CEYLON AND THE MALAY STATES.

As Seen by The Editor of "The India Rubber World."

FOURTH LETTER.

Rubber Trees and Tapping at Culloden.—Night Tapping — Rubber Curing House.—Oil from *Hevea* Nuts.—Cost of Pará Rubber at Colombo.—Arapalakanda Estate.—Smoking Ceylon Rubber.—Sunnycroft Estate.—Enemies of the *Hevea*.—A Touch of Fever.—The Forest Conservator.—A Paddy Field Experience.

AT the close of my first day at Culloden, when the sun had dropped low enough to make it fairly comfortable in the open, at Mr. Harrison's invitation we started out to see the rubber. The plantation is primarily for tea, the rubber having been planted later through the tea and also in some of the valleys. The land is very rocky, iron-stone abounding, but there must be something in the soil that suits the *Hevea*, for it flourished wonderfully. The only place where it did not appear to do well was in very low ground, where there was no drainage. The swampy portions of the land have, therefore, been thoroughly drained; indeed, where some of the seven and eight year old rubber now is there had once been a bog where cattle were wont to get mired. The rubber on this soil, which was very rich, had some 3 feet of drainage. Of course it was to be expected that the *Hevea* would grow in such soil as this, but I must confess that I was amazed to see it flourishing far up on rocky hillsides, and sending its laterals in all directions for food. The *Hevea* has proved itself, in Ceylon at least, a most voracious surface feeder, and in this connection it is worth while to examine the illustration of the uprooted tree held erect between two coconut palms, with the laterals stretched right and left, showing a growth longer than the tree trunk itself. The photograph from which my illustration was made was taken by Mr. J. B. Carruthers, and is most graphic.*

The tapping of the trees begins just as soon as it is light in the morning, for through the middle of the day the *latex* does not flow freely, but starts up again about 4 in the afternoon and is continued until dark. The trees are tapped when they show a girth of 2 feet, without regard to their age. No ladders or supports are used in tapping, as it wasn't found profitable to tap higher than a coolie can reach while standing on the ground. The tool is a very simple V-shaped knife with two cutting edges, and a single slanting cut about 8 inches long has been found to be best, a tin cup being placed under the lower end of the cut and held in position by forcing its sharp edge under the bark. These cuts, by the way, are about a foot apart, sometimes closer, and all run in the same direction, the herring bone and the V-shaped cuts being no more in evidence.

The practice is also followed now of cutting a very thin shaving from one side of the cut, every other day; eleven times, in other words, reopening instead of tapping. Before placing the tin cup under the cut, it is rinsed out in cold water to keep the *latex* from adhering to the tin, and also to keep it from too quick a coagulation. While I was there a very interesting experiment in scraping the outer bark from the trees had just been finished. The results, as far as could be determined, were such a stimulation to the lactiferous ducts that the flow was increased nearly 50 per cent. The oldest trees on this plantation, by the way, are 18 years, and have produced 3 pounds a year; by scraping the outer bark off they expect to get 6 pounds a year from each of these. There are only a few of these older trees, however, most of them being 7 or 8 years of age. All

through the rubber orchards on this estate were hundreds of young Pará trees that were self sown; indeed in many places they had come up so thickly as to be a nuisance. The workmen on this estate, 100 in number, are all Tamil coolies, as the Singalese do not care to work, preferring to cultivate rice, a good crop of which insures them a two or three years' vacation. By the time we had examined a few *Castilloa* trees that were planted by way of experiment, night had fallen, and we wended our way back to the bungalow, where, after a hot bath, as is the custom of the country, we sat down to dinner in pajamas, the "punkah walla" stirring the heavy, moist air by most vigorous pulls at the "punkah" cord throughout the meal.

The rainfall up here in Kalutara is rather more than down at the coast, being, so I was informed, 144 inches, and the maximum temperature 94° F. While I was there it was unusually dry, yet the rubber looked well and there was a record of six weeks without rain, which had no apparent effect upon it. The next morning we visited other parts of the plantation and saw a great deal of fine rubber. At present there is an excellent market for the seed, as so many new plantations are going in. As a better preparation, however, against the time when the seed will be a drug in the market, my host was experimenting with an oil made from the seeds. With a rude native mill he turned out an oil which the native women eagerly purchased to burn before their gods, while the pressed cake made an excellent food for cattle. During the forenoon I saw a large Ceará rubber tree cut down and it seemed to have no *latex* in it at all. I also saw a Pará rubber tree, self sown, growing out of a cleft in the rock where there was apparently no soil, the trunk being 10 inches in diameter and apparently very thrifty.



VIEW FROM HILLY ROAD NEAR CULLODEN.

* The illustration appeared in our June 1 issue—page 200.



YOUNG "HEVEA" TREES.

[Planted among tea along a watercourse, in Kalatura; view in 1898.]

One of the most interesting features of this plantation was the rubber curing house, where the milk is coagulated and the rubber prepared for market. This is a one story brick building, 30 X 80 feet, smelling for all the world like a dairy as one steps within its doors. At one end of the room is a long table upon which are hundreds of enamelled iron pans, capable of holding about a quart each. Into these pans the milk is poured through a cheese cloth strainer, after having been previously strained in the field. To it is often added a very little acetic acid—a few drops only. This is allowed to stand over night, and in the morning there is to be found in each pan a pure white pancake of rubber, soft, spongy, and full of water. Each cake is then rolled on a zinc covered table with a hand roller and much of the water thus expressed. The name of the estate is then stamped upon it with either a wooden or metal die, when it is ready for the heater room. The heaters used are simply charcoal ovens, the rubber being spread on wire screens above the fire, and left for three or four hours. By this time the pancakes have lost about 50 per cent. in weight and are beginning to assume a decidedly darker hue. Cakes in the condition described, if in South America would be immediately marketed, but not in Ceylon. From the heaters they go to drying racks, where they are air dried for a month to six weeks, depending somewhat upon the weather, and are shipped only after careful examination as to quality and dryness. The care which the planters are expending upon the preparation of the rubber is the best sort of guarantee that the quality will be sustained, and that the day will come when the name of a plantation on a cake of rubber will tell its value almost to a penny. To follow the rubber a little further it is, when perfectly satisfactory to the planter, packed in chests, the counterpart of the regulation tea chest, made of "momi" wood that comes in shoos from Japan, each package containing about 200 pounds.

There is also a coarse rubber that is secured by picking the scrap from tapped trees. It is a very excellent rubber, and while I was there it found a market at 3s. 5½d., while the fine was bringing 4s. 9½d. There are those who claim that it is unwise to pick the film of rubber out of the tapping wounds in the tree, as there is danger that insects or disease enter there. Such a theory is plausible, but so far I have not heard of ill resulting from such removal of the air dried scrap.

This coarse rubber, by the way, was not absolutely clean; that is, it contained bits of bark, and vegetable matter often-



FIFTEEN YEAR OLD "HEVEA" TREES.

[Planted among tea on an estate in Kalatura; view in 1898; "herring-bone" tapping is no longer practiced.]

times. As labor is so cheap, and there is plenty of water, it could be very easily washed. For this purpose the ordinary corrugated roll washer that is used in the rubber factories has been suggested, but it hardly fits the case, as the scraps are so very small. A more practical plan would be to run them through a winnowing machine such as is used to blow the dirt out of peas and beans and let the air blast take out as much bark as possible. Then if necessary use a washer of the paper engine type to wash and beat the rest out. Of course, for quick drying the gum should then be sheeted, and either plain or corrugated rolls would accomplish that, and it could hang until dry. There is so little of the scrap, however, that the simple winnowing machine is probably all that would be necessary or profitable.

The time will come, however, when the coagulating and drying will have to be done on a different plan. The present method takes up too much room and is too slow. It would be perfectly easy to have coagulating pans that would deliver strips of rubber 10 feet long, a foot wide, and a quarter of an inch thick. These strips could then be run through rolls that would squeeze the excess water out, and at the same time imprint the plantation name every few inches. Then the strips could be hung up to dry and any degree of artificial heat applied that was thought best.

There have been suggested also a variety of quick coagulating devices, such as endless belts that take a film of milk into a drying chamber and deliver it to the other side coagulated and dried. Some such plan may prevail, but as yet the planters are not ready for it.

After many experiments the manager at Culloden has satisfied himself that only the very early morning or the late afternoon are the proper times to tap, as in the middle of the day the flow of latex is almost nothing. The trees are therefore tapped from 4 until 7 A. M., and after 3 30 P. M. and as long as it is light. Indeed, the collection of the latex is often done by torchlight. As an instance of Mr. Harrison's alertness in getting all he can out of the trees with safety, he told me of a series of experiments that he was about to institute for all night tapping. It seems he learned that certain sugar estates did all their cutting of the cane by electric light, and that the amount of saccharine matter secured was much larger than in the day time, and as the habit of the *Hevea* tree pointed toward more latex at night he felt that a similar experiment would be justified.



"HEVEA" TREES AT CULLODEN.
[Seven and eight years old.]

At the present time he keeps a careful record of the production of each tree and for this purpose the trees are numbered. When a tree has a circumference of 30 inches it is fit to tap, whether it is 5, 6, 7, or more years old. His first year's tapping in 1901 was 4010 trees, from which he secured 4600 pounds of first quality Pará. In 1902 the production was about the same, the production for 1903 from 8300 trees being 10,500 pounds. From 2500 trees on Heatherly, which has just come in bearing, he gets 3500 pounds.

To show how thoroughly Mr. Harrison is seeking for knowledge of the *Hevea*, he has even had the leaves analyzed to know just what they get in the way of food from the soil of Culloden. The analysis is as follows:

	Fresh.	Air Dried.
Moisture.....	90.60%	10.600%
Organic matter.	8.510%	85.150%
Ash.....	.849%	4.250%

The analysis of the organic matter showed that it contained 3.696 per cent. of nitrogen, while the ash showed as follows:

Phosphoric acid....	.398%	Lime.....	.084%
Potash	1.320%	Magnesia.....	2.117%

Hence 1000 pounds dried leaves would contain about 4 pounds phosphoric acid; 13.2 pounds potash; .8 pounds lime; 21.1 pounds magnesia; and 37 pounds nitrogen. From this it will be seen that the leaf is curiously rich in magnesia, but whether from selection or force of circumstances it is difficult to say.

Most of the work is done by contract, each coolie being expected to get *latex* enough to produce one pound of dried rubber a day. It is very interesting to watch them as they troop up to the curing house early in the forenoon, with huge tin cans of *latex* on their heads, and to note how they watch the straining that none is slopped over, and even rinse cups, cans, and every receptacle and add it to the rest that no precious drop escape.

The rubber landed in Colombo costs 16 cents a pound, United States money. Just to let the skeptical do a little bit of thinking, and by the skeptical I mean the majority of rubber manufacturers who believe that the Pará from the Ama-

zon is a better business proposition—just to start them thinking, therefore, I want to ask them to read the following:

FINE PARÁ RUBBER FROM CEYLON.

Sells at Liverpool, per pound.....	\$1.20
Costs f. o. b. Liverpool.....	.17
Export duty.....	nil

Planters' profit..... \$1.03

FINE PARÁ RUBBER FROM BRAZIL.

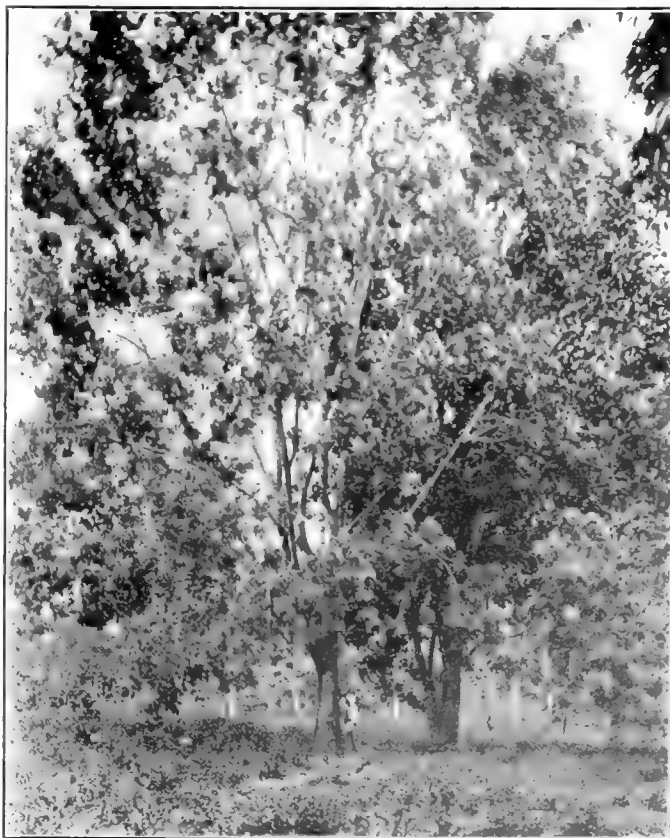
Sells at Liverpool, per pound.....	\$1.00
Costs f. o. b. Liverpool, minimum.....	.21
Export duty.....	.23

Profit..... \$0.56

The above figures both for Ceylon and South America are very small—that is the cost figures. It is probable that 20 cents a pound for cost in Ceylon would be nearer actual practise, while Pará rubber costs landed in Pará or Manáos often 40, 50, and 60 cents a pound, the figures being dependent upon the section that it comes from.

As a matter of fact, the Tamil coolie whom the planters employ is not a high salaried individual. His pay averages about 13 cents a day, United States money. To this is added the coolie "lines" or houses which are free of rent to him, as is also medical attendance. The planters keep no stores usually, but they do buy rice and furnish it at cost to their laborers, the allowance being 1 bushel a week for a man, and $\frac{3}{4}$ bushel for a woman.

It was while sitting on the cool flags under the broad porch at the Harrison bungalow that the subject of snakes came up. Both my host and his friend acknowledged that cobras were very plentiful, and that they had a great liking for cool bungalows, which they sought to enter whenever they thought they



"HEVEA" TREES AT CULLODEN
[Eighteen years old from planting.]



RUBBER CURING HOUSE, CULLODEN.

could safely do so. They said it was a very rare thing, however, for a white man to be bitten by one. But the natives are often bitten, and sometimes fatally. The Singalese won't kill them, as they think the cobra quite likely to possess the soul of some dead relative of theirs. The Tamils, however, have no such prejudice and are perfectly willing to slaughter them whenever they can. My informants acknowledged that the bite of the cobra was very venomous, but not necessarily fatal. They said that some years before there had lived in that district a man who was known as the cobra king, who not only cured snake bites in others, but was proof against poison himself. He used to tease the snakes to make them bite him, and even rub their venom into cuts on his arms, and apparently without the least injury. But he was finally attacked by a sort of rheumatism, which made him a helpless cripple, and he went back to England to get cured.

Close to Culloden is Arapolakanda, where I next visited, being entertained by the resident manager, Mr. H. V. Bagot. He has but fifteen acres of *Hevea* in bearing, and gets twenty pounds a day. In coagulating, Mr. Bagot did not follow exactly the process used by his neighbor, Mr. Harrison, the difference being this; he added no acid to hasten coagulation, and also smoked the rubber over a fire of sawdust and bark. The final drying was accomplished by spreading on wire screens, and not a pound was shipped until it was perfectly dry and transparent. By the way, he reported that he had one "dumb" tree that was big, thrifty, and apparently exactly like the others, but that it gave no milk. At the lower end of Arapolakanda are some acres of marsh land that have been drained and reclaimed and on which is standing some fine rubber. As this land is near the river, it is sometimes inundated, the water standing four feet up on the trunks, but for a short time only.

Mr. Bagot acknowledged that the trees were set back somewhat, but not very much. The general opinion in Ceylon, however, is that inundations are very apt to kill out the *Hevea*.

The oldest rubber on this plantation is some 15 to 18 years old, planted quite closely together in a sheltered nook. In this lot the outside trees which get the sun are by far the largest, one that I measured roughly being 2 feet in diameter and 60 feet high. After having seen all of the rubber, I examined the tea, saw what sights there were, and spent a very pleasant evening with Mr. Bagot, at whose bungalow I slept.

Very early the next morning, with a coolie carrying my luggage, I made my way to the river and climbing down its steep clayey bank, found myself aboard the steamer *Kaluganga*. This craft was some 60 feet long and 12 feet wide, with a small wood-burning boiler and engine amidships. The forward deck was reserved for the whites, while the blacks huddled together at the stern. I had barely embarked, when down came one of Mr. Wither's coolies with two steamer chairs, one of which he had thoughtfully brought for me. After a most earsplitting whistle, the little steamer cast off and started down the deep, muddy stream. Shortly after leaving the pier we passed the Clyde estate, which shows a large planting of tea and Pará rubber, the trees young, straight, and tall. The run down the river

was a pleasant one, but in no way exciting, and early in the forenoon I took a train from Kalutara and was again back in Colombo. As I planned to leave for the Kelani valley that afternoon, I went to the Grand Oriental Hotel for breakfast and a *siesta*, from which I was awakened by a pleasant young reporter, who interviewed me most thoroughly. I want to say in passing that all through the East the newspaper men seemed alive to the importance of the rubber question and printed many columns of things that I did and didn't say. When he had finished with me I summoned Miguel and we took rickshaws for Maradana

Junction station and there bought tickets for Karawanella. After a somewhat tiresome ride in the train we reached our



MR. HARRISON'S BUNGALOW, CULLODEN.



SCENE IN KELANI VALLEY, CEYLON



"HEVEA" TREES AT SUNNYCROFT.

destination and I found Mr. W. Forsythe, of the Sunnycroft estate, awaiting me with a very swell rig consisting of a fine horse and high cart. Into the trap I got, and Miguel hiring a bullock hackery, we drove merrily off. The Forsythe conveyance soon left the other far behind, and as evening fell and it began to grow chilly, I was moved to ask how much further Sunnycroft might be. I then learned that it was eight miles from the station, whereas I had been told that it was two. As the road was constantly ascending, it grew colder and colder, and as Miguel had my coat, I suggested to Mr. Forsythe that I was in for a chill. He therefore stopped at the bungalow of a planter friend and secured a coat for me and our journey was then continued. Had it not been for the chill in the air, I should have enjoyed the ride mightily, as the road was most picturesque, winding through native villages, crossing rivers and often crowded with strange conveyances. Mr. Forsythe entertained me very pleasantly that night, and the next morning we walked some eight miles over his plantation. His land was exceedingly hilly, but under a high state of cultivation, showing many hundreds of acres of fine tea. He also had about three hundred *Hevea* trees planted in 1897, which would average 40 inches in circumference. In addition to this he had planted rubber everywhere through his tea, but very little of it was over 2 years old. In his section he found that when the *Hevea* trees were young it was a constant fight to keep the porcupines and wild pigs from eating them. He was, therefore, protecting the young trees in certain sections with wire fences, the lower side of which were buried in the ground.

It was during this walk that I discovered what it meant to get chilled in a tropical climate, and to have that chill develop into an incipient fever. Although the sun was scorching hot and I was exercising, I wasn't perspiring a particle. When we got back to the bungalow in the early afternoon, therefore, after due apology for being ill, I took twenty grains of quinine, and wrapping myself in blankets, went to sleep. The quinine or the blankets did the business, and the next morning I was

able to take a bullock hackery at 5 o'clock and rattle and bump down the mountain road to the railroad station, whence I took train for Colombo.

The next day I was fortunate enough to meet Mr. F. Lewis, the assistant conservator of forests, who has done a great deal to further the planting interests in Ceylon, and whose opinions on rubber are most sound. In the course of conversation, he acknowledged that he and his coworkers were continually on the outlook for the appearance of disease in the rubber. He said that wherever large areas of anything were cultivated, nature came forward with some disease or pest. He believed, however, that intelligence and vigilance would keep such visitations at least under control. I asked him specifically about his idea of distances in planting rubber, and his conclusions were almost identical with my own, that it was well to plant closely at first, that weeds and grass might be kept down and perhaps cut out the weaklings later. Of course in planting through tea no such close setting can be indulged in.

My visit to Ceylon was drawing rapidly to a close, as I was booked to sail on the *Bengal* on the 20th. Any further excursions that I took into the country were, therefore, of minor importance, and of adventures I had none except that little affair with the water buffalo. It came about through my desire to see a paddy field at close quarters. I was some little way out of town, and stepping down off the roadway walked out on the narrow bank of clayey mud that separated one rice plot from another. There were hundreds of these plots and miles of narrow earthworks, and I had gotten some distance out, when a huge water buffalo, wallowing in the mud, made up his mind that I was an intruder, and started for me. As he weighed about a ton, and knew the country anyhow, I didn't stop to argue, but raced back for the road. I am considered a pretty fair runner, but I verily believe that the beast would have caught me if it hadn't been for a native who ran out with a switch and headed him off. The absurd part of it was that my rescuer was a mite of a boy, his only clothing being a red string round his waist, but he certainly knew the proper profanity to apply to water buffaloes.

By the way, speaking of paddy fields, it seems a shame that the very best land of Ceylon should be given up to the culture of rice. If those same fields were drained and planted to Pará rubber, there is no doubt but they would show an infinitely bigger profit, even if those who turned them into rubber orchards paid, as an annual rental, the amount of rice that they are supposed to produce.

[TO BE CONTINUED.]



PADDY [RICE] FIELD IN CEYLON.

SCIENTIFIC VULCANIZATION METHODS.

BY CHARLES J. TAGLIABUE.

II.—AUTOMATIC CONTROL OF TEMPERATURE.

IN every branch of rubber manufacture, uniformity of product is possible only by maintaining accurate control of vulcanizing conditions. In practice, dependence is placed on a heater man who is left to his own judgment to regulate the heat by hand, basing his adjustments of the steam inlet and outlet on thermometer readings. With such a system only approximate results are possible.

Long experiment has resulted in the development of a scientific system of automatic time and temperature control, whereby, once adjusted, the vulcanizing process is perfectly regulated. This is known as the "Tagliabue system." Its proper application necessitates correct plans of piping and ample steam supply to insure its uniform and rapid distribution to all parts of the heater or press, and the instant removal of the air, wet steam, and condensation.

The leading feature of the "system" is the Pressure Governor, which is an apparatus for throttling the steam valve, not in accordance with the initial or boiler pressure as in ordinary regulation, but in accordance with the pressures inside of the heater or press. The mechanical features of the apparatus are so simple and few that derangement is scarcely possible, or, if it takes place, it can be quickly remedied by any mechanic or engineer.

When the governor is set for the desired temperature or pressure, it is necessary only to turn on the steam and the heater practically takes care of itself. As there is a definite equivalent in degrees of temperature for every pound of pressure of saturated steam, it is only necessary to provide weights for the governor which will give control at any desired degree of heat, and as all the observations are made with the thermometer, it is virtually temperature control.

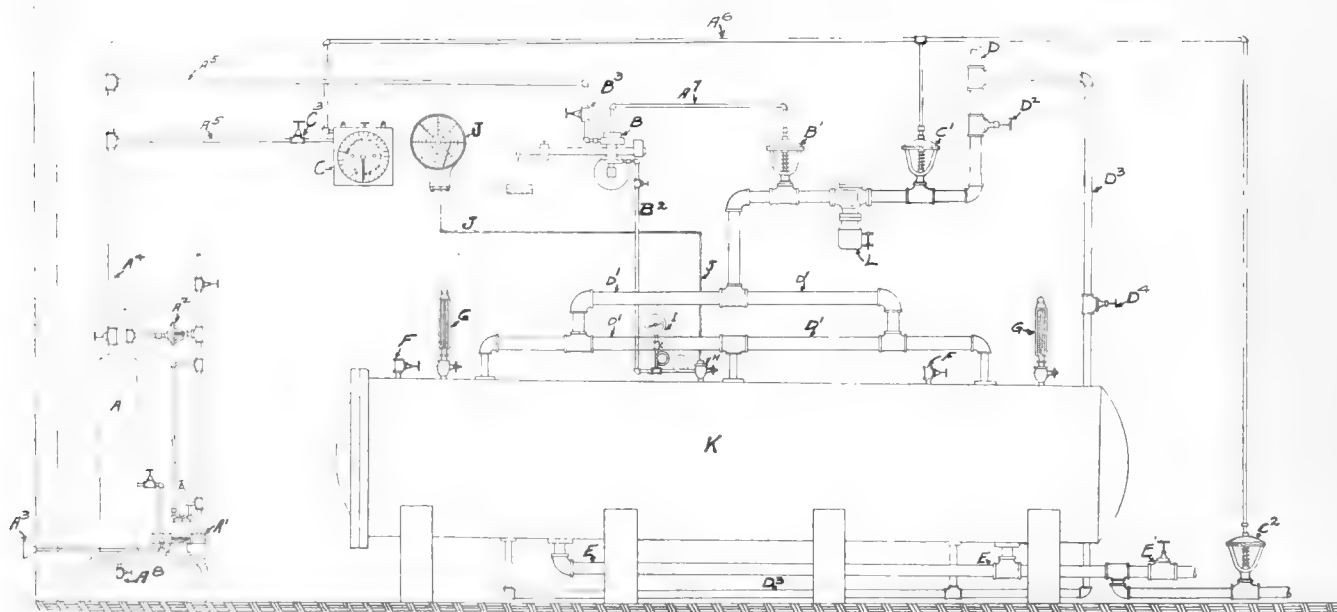
It is true, at the beginning of the cure, when the cold heater is started, that the temperatures and pressures do not correspond, but this period is not counted in as part of the actual curing time. As soon as the heater becomes thoroughly heated, and the condensation of the steam is again normal, the temperature and the pressure will be found to agree absolutely

and invariably. Thus the actual time of curing should be measured from the time the heater has reached its maximum temperature.

Time is equally important with temperature in vulcanization, and should be as exactly regulated. The usual method is to mark on the heater or other convenient place the length of cure, or time when it should end. This time having elapsed, the heater man is supposed to shut off steam and blow off the heater. The Tagliabue automatic system shuts off the steam at the expiration of the cure, and if desired also operates a blow off valve, to blow out the steam. This, in conjunction with the temperature controlling device, makes the process of curing practically automatic and positive.

The diagram illustrates the arrangement of the entire system as applied to a properly piped heater. The system is pneumatic—i. e., compressed air is the motive power for operating the controlling valves. The air compressing outfit of the system consists of a small steam air compressor A^1 and air storage tank A , mounted on a suitable stand. The compressor is provided with all the necessary lubricators, the steam supply is $\frac{1}{4}$ " and the exhaust $\frac{3}{8}$ ". The tank is supplied with pressure gage, and from the top is taken the main air supply line A^4 , subdividing into the branch lines A^5 , supplying the pressure governor B , and the time device C . The air pressure required is 15 pounds or more. To maintain this pressure constant the controlling valve A^2 is placed on the steam line to compressor, and connected to storage tank as shown. This valve can be adjusted for any required air pressure, and will control the supply of steam to the compressor, so that the desired pressure of air will be maintained, with a minimum use of steam. As the amount of air used by each device is small, this compressor will furnish the air for quite a number. The air intake to compressor is placed out of doors, and should be located away from the steam vapor or dust. This compressor requires little steam, and never stops. If properly supplied with oil it will take care of itself. In the bottom of the storage tank is a blow off valve, A^3 , for blowing off at intervals accumulated water and oil.

The pressure governor B is provided with a flange for securing it to the wall near the heater or press. The lever is hung on knife edges and is as accurate as a scale beam as it rests on a rubber diaphragm in the circular base. Above the lever is a



TAGLIABUE AUTOMATIC SYSTEM OF TEMPERATURE AND TIME CONTROL.

circular casing, containing the air valves operated by the lever. The base containing the diaphragm is connected to heater or press by means of pipe B^2 . To the top is connected the air supply pipe A^5 , and the air discharge pipe A^7 , which latter is connected to diaphragm valve B^1 .

The diaphragm valve B^1 is placed on the steam line to the heater, and is of the globe type. On the bonnet is screwed a cast iron frame, in the top of which is secured a rubber diaphragm. The stem of the valve is sliding, surrounded by a volute spring, and topped with a wooden saucer, resting against the rubber diaphragm. When the latter is actuated, it presses against the saucer which forces down the sliding stem, compresses the spring and closes the valve. When the air discharges, the diaphragm collapses; the steam pressure under the seat of the valve, by the aid of the spring, forces back the stem, and opens the valve.

The pressure governor operates thus: A weight equivalent to the pressure denoting the temperature desired, is placed on the hanger at the end of the lever. Cock B^3 admitting compressed air to the governor is opened, and steam turned into the heater or press at the hand valve D^2 . The steam pressure in the heater or press is communicated to the diaphragm of the governor, through the pipe B^2 , and when the desired pressure has been reached, the diaphragm actuates the lever, which in turn operates the air inlet valve in the upper casing B , permitting the passage of air into the pipe A^7 , compressing the diaphragm in steam valve B^1 , forcing down the stem and shutting off the steam. When the pressure falls the fractional part of a pound, the governor diaphragm collapses slightly, lowers the lever, closing the air inlet valve, and at the same time opening an air discharge valve, which relieves the steam valve diaphragm of the air pressure, causing it to collapse, and permitting the steam valve to open again. During the curing process the diaphragm steam valve B^1 is rarely wide open, or fully closed, for the reason that the governor is so sensitive that it keeps the valve throttling, responding instantly to the slightest change of pressure, and delivering just the requisite amount of steam to maintain the vulcanizer at the exact temperature or pressure desired.

The clock C and diaphragm steam valves C^1 and C^2 constitute the time device of the system. The valve C^1 is on the steam supply line to the heater, and when actuated by the clock, it opens and blows out steam. The clock dial is marked for 60 or more minutes, moving from left to right. At the 0 of the dial, the lever of a pneumatic valve projects and engages a spindle projecting above the top of the case. The clock is provided with a pointer or hand, which can be set for the time, and then clamped to the spindle or shaft.

Compressed air is supplied by pipe A^5 and connected with valves C^1 and C^2 by A^6 , operating as follows: Air cock C^3 is opened admitting air to the pneumatic valve of the clock, the hand is set for the time required for the cure. The hand travels to the left, and at the expiration of the time, it will trip the lever of the pneumatic valve, and thus turn on air into pipe A^6 , which will operate the diaphragms of valves C^1 and C^2 , thereby shutting off and blowing out the steam, so that without the necessity of handling any valves, the heater may be opened and goods taken out. The operation of the clock is independent of that of the governor.

A special feature of this system is that either or both the governor and time device can be instantly thrown out of service by merely closing the air cocks B^3 and C^3 in case of accident, and the heater can be operated by hand in the usual way.

Besides showing the application of the pressure governor and the time device, the diagram illustrates a correct plan of piping

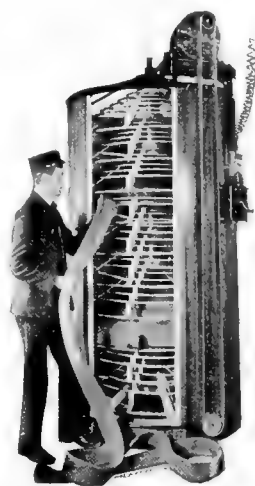
for a hose heater, with the necessary fittings and their best location. D represents the steam supply from boiler, and $D^1 D^1 D^1 D^1$ the 2" steam supply to heater with three 1" inlets. This supply is so piped as to give an equal volume of steam to each of three inlets, insuring a uniform distribution of steam in the heater. D^3 represents 1" steam supply to bottom of heater with two inlets, and $E E$ discharge pipe from heater. $F F$ represents the air blow off valves, which should be at least 1 1/4" to vent the air quickly.

$G G$ represents the mercury thermometers, screwed into special fittings, insuring steam circulation. H represents similar fitting for a recording thermometer. This fitting is provided with steam circulation cock, also with opening for attaching steam gage and pressure governor connection. I represents the ordinary spring pressure gage. $J J$ represents the recording thermometer with its connecting tube, which can be 25 or more feet in length. K represents the heater, and L the steam separator.

The application and operation of the pressure governor is virtually the same for a press, and the same general plan of steam supply should be used—i. e., uniform distribution of steam to the platens. Mechanical goods presses running at the same heats can be piped in groups, so that one pressure governor can be used to control the steam in all of them. As many as twelve or more presses may be controlled by one governor, with absolute certainty.

NEW DRIER FOR FIRE HOSE.

THE new rotary fire hose drier shown in the illustration is designed for use in fire stations. As will be seen, it is cylindrical in form, occupying a space only 4 feet square and 8 feet high, which in itself is a recommendation where space is limited. In this drier the wet hose is subjected to currents of air which evaporate all moisture. The rotary motion of the hose very materially aids the work of the exhaust fan at the bottom of the cylinder. The hose in the case rests lightly upon cylindrical racks, with sufficient space between coils to prevent contact. The kind of motor used depends upon the available motive power, electricity being preferable. The motor revolves the hose shaft and fan, causing a strong current of air (about 3000 feet a minute) to pass rapidly through the drier and over and around the hose, the exhaust fan at the bottom revolving five times as fast as the hose, creating double currents of air.



The rate of speed can be regulated at will, the whole operation being under perfect control at all times. It winds and unwinds as easily as a ball of yarn. It can be operated by one man, who can handle 600 feet of hose at one charge with no trouble and practically no labor. The device is substantially constructed, all the interior work being of iron, steel, and wood, the exterior or casing of wood natural finish, the whole presenting a neat appearance. The rotary motion of the hose very materially aids the work of the exhaust fan at bottom of the cylinder. The cost is less than that of the hose towers in common use. Manufactured by the recently incorporated Rotary Fire Hose Drier Co., No. 910 Cumberland street, Lebanon, Pennsylvania.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

THE high price of rubber, and the continued short time movement in the Lancashire cotton trade, are proving adverse factors of some moment with regard to the mechanical rubber trade. There can be no doubt that the class of merchants known as mill furnishers have been experiencing a bad time. But little of the rubber used in the mills and workshops of industrial Lancashire and Yorkshire is ordered at first hand, the mill furnisher, as middleman, still holding an important position, from which it must be said the rubber manufacturer has no wish to oust him, owing to so many of the orders being of small magnitude. With regard to the cause of the high price of the raw material the manufacturer hazards various theories in his rage and impotence, these theories, be it said, being of a diversified character. Meeting the other day a merchant engaged in the rubber export trade in Brazil, I asked him his opinion as to the cause of the rise in price. His answer was immediate and concise: "It is the greed of your millionaire rubber merchants in England; it is they who are making money out of a situation which they have created; there are not fortunes being made out of rubber in Brazil." I give this answer for what it is worth. Of course there may be an effective reply from the other side. In the event of such being forthcoming, I have no doubt the Editor will accord it an equal publicity. Those who read their INDIA RUBBER WORLD diligently will notice in the last issue the remark of a Brazilian merchant to the effect that any rise in the price of rubber goes to benefit those who engage and fit out the *seringuieiros*. My informant, however, was not inclined to accede to this view, but was emphatic that all the large profits were made in Liverpool.*

THE excuse put forward by sundry shoemakers who have got into financial difficulties is, that the repairing branch of their businesses has fallen off considerably, owing to the introduction of the rubber heel. That this plaint has some foundation in fact cannot be denied, for it is quite surprising the amount of business which is being done in this line. On enquiry of one of our largest rubber firms the other day as to the state of trade, I found that despite quietness in some branches, the rubber heel demand kept them quite busy, the output indeed being as much as five tons per day. No doubt it would be incorrect to multiply this figure by 300 or so to get an estimate of the yearly business, but still this daily production, even if only intermittent, seems worth special mention.

ELSEWHERE I have made a remark on the Ceará tree in Ceylon, and now propose to say a word or two on this rubber in general. The Ceará or manicoba rubber has, in Great Britain, at any rate, always held a rather doubtful position, though I am not aware that the statement as to liability to decay is based on any very sure foundation. In my own experience the premature decay of a large number of cycle tire covers was attributed to the fact of Ceará rubber being almost exclusively used, but it is open to question whether incorrect vulcanization had not a good deal to do with it. The chief objection urged against the rubber to-

day is the variable amount of impurities it contains, and it is clear that those who are desirous of seeing the market for this rubber extended should look closely into this matter. It is really only a matter of carelessness, or perhaps greed, on the part of the collectors. The rubber as it slowly exudes from the cut could be pulled off the tree in quite a clean condition, but the collector prefers to do this work with his knife, which action brings off a considerable amount of bark to increase the bulk of the rubber. Ceará rubber which comes to Europe may lose over 30 per cent., and its purchase is felt to be rather too much of a speculation. That the amount exported from Ceará could be largely augmented both from wild and cultivated there is no doubt, and it is interesting to note that a Frenchman has a large plantation of the trees in the state, the product of which will be shortly on the market. In all probability our manufacturers will soon be in a position to judge of the properties of the rubber without the uncertainty regarding the loss on washing which has been so much against it in the past.

STILL on the topic of raw rubber, a fact which has recently come to my notice seems worthy of record. Some years ago a South American merchant who was exporting some Pernambuco rubber to a British rubber manufacturing firm, suggested to the latter that as this class of rubber was carelessly collected and often badly coagulated by the alum method, he would probably obtain a better price if it was sold free from resinous matters. A leading official of the firm, however, informed him that they preferred the rubber in its sticky state, and stated further that if he took the resins out they would have to replace them. Now this may be quite true for the particular work the firm in question wanted the rubber for, but it led the inquirer for years to believe that resinous matters formed an important part of the rubber. I am sure that there have been plenty of buyers of Pernambuco rubber in the past who would gladly have dispensed with its "tarry" components, and it seems unfortunate that the suggested reform should have been abandoned consequent on the above statement made to an exporter.

ANYTHING I may say on this subject will no doubt prove rather flat and uninteresting during the publication of our Editor's travel notes, but perhaps a word or two from London by way of addendum will not be altogether out of place. I have recently had some conversation with a Ceylon planter of many years standing now taking a holiday in England. From what he said they seem to be more than satisfied with the prices obtained for the Pará rubber. I suggested that when shipments in larger bulk are affected the price would probably fall. He agreed with me in this prognostication but did not seem at all upset by the idea as indeed there seemed no reason to considering the figures he gave me as to the cost of production. On turning the conversation over to Ceará rubber I struck a regretful chord in his mind. "If we had never heard of Ceará rubber," he said, "at the time when we introduced it about 20 years ago, we should have been much better off than we are to-day."

A FRIEND of mine who is engaged in mining operations in Venezuela writes to know if I can tell him what is the matter with the Balata market over here. He says that the Balata business is in a very bad state owing to the low price, and that the merchants in Ciudad

*It would be interesting to know whether, in the opinion of the merchant quoted by our correspondent, "the millionaire rubber merchants in England" make profits also on the rubber shipped direct from the Amazon river to New York—one half or more of the entire Pará output.—THE EDITOR.

HIGH PRICE
OF RUBBER.RUBBER
HEELS.CEARÁ
RUBBER.RATHER
DOUBTFUL
ADVICE.CEYLON
RUBBER.BALATA
INDUSTRY.

Bolivar are holding their stocks and that also the regular collectors in the forest have stopped work. He suggests that it is being obtained elsewhere. Certainly the Guianas have of late got back to something like their old figures of production but I imagine that the root of the evil complained of is that the supply has overstepped the demand. I have not heard of any new demand in this country or that the principal users have increased their purchases to any material extent. In fact it is quite possible that the demand has decreased owing to the substitution of the rubber cored golf ball for the old type made of solid gutta. It is an open secret that Balata entered pretty largely into the composition of the solid gutta ball and the decreased demand for this type of ball seems a very feasible explanation of the present depression in Venezuela.

THERE seems to be something of an upset in this market as far as retail prices are concerned. One reads in the shop windows that the 3s. 6d. sponge can now be obtained for 2s. 3d. and small ones are now priced as low as 7½d., though for a long time the lowest price was 2s. The bulk of those on offer bear a label inscribed with Slav characters, the import of which is rather a mystery to the great bulk of purchasers. I have not yet heard of any British firm putting this article on the market.

To judge by the newspaper notices and expressions of public interest one would imagine that the use of rubber pavement, as in the entrance to the new buildings of the Savoy Hotel, London, was a novelty of to-day. It is no reflection, however, on Messrs. Charles Macintosh & Co., Limited, whose work has just attracted so much attention, to say that the North British Rubber Co., Limited, put down, many years ago, at Euston station, rubber pavement of a similar nature. It is somewhat surprising, when we come to consider the advantages of such pavement from points of view other than its wearing capacity, that it has not been utilized to a greater extent under like circumstances; perhaps a fillip will now be given to this branch, though with rubber at its present price the time seems none too favorable.

THE tenor of the report made by the Automobile Club on the extended trials of side slip preventives, is to the effect that the desired effect has not yet been obtained. My professional profits are not such as to permit of the purchase of a thousand guinea car, so that I cannot speak from personal experience, but from what my friends tell me, it would seem that the best way to prevent side slip is to stay at home when the going is greasy. The various devices of metal studs, leather bands, etc., are said to be certainly effective to a greater or less extent, but at the same time they detract from the life of the rubber and lead, therefore, to additional expense of up-keep.

THE fear that the damages for libel awarded against Captain Guy Burrows, for certain statements in his book ("The Curse of Central Africa"), would prove a severe knock to the Congo agitation in England, has been falsified by the event. Earl Percy has just declared in the House of Commons that "it is impossible to excuse a system under which the collection of rubber is made an excuse for insensate and inhuman barbarities." It is clear, from the attitude of both sides of the House and from what has transpired at public meetings throughout the country, that the nation generally is deeply stirred in the matter. In this we seem to have only America and Italy with us, the case being, it appears, not of sufficient commercial interest to the other Powers to call for their active interest. As matters stand at present there seems no immediate likelihood of action by the Powers in concert, but Lord Lansdowne has got a pledge from

the Congo State government that an exhaustive inquiry shall be held into the whole character of the administration and the conduct of local officials and licensed companies. It hardly seems that this sort of inquiry will be strong enough, and it would not be surprising if the result went to show that the whole agitation was got up by merchants from mercenary motives, as so strongly alleged in Brussels.

DURING the short space of time in which trains between Southport and Liverpool have been worked by electricity two fatal accidents have occurred, owing to contact with the "live" rail. The public excitement has naturally been aroused to the annoyance of the contractors, Messrs. Dick, Kerr & Co., who point out that in each case the victims were trespassers on the line. This certainly is the case, but if such fatalities continue serious doubts will arise as to the advisability of adopting this system of electrification in populous districts, and this may lead to a setback in what promised to be a revolution in suburban railway working.

I UNDERSTAND that Messrs. Johnson & Phillips, the well known electric cable manufacturers of Charlton, near London, intend to convert their business from a private into a public limited company, and that Mr. Claud Johnson, the principal partner, intends to relinquish active interest in the concern. The capital with which the new company is credited is in the neighborhood of half a million, but I have good reason to suppose that £400,000 is the correct figure.—On May 28 a party of members of the Institution of Marine Engineers visited the Silvertown works of the India Rubber, Gutta Percha, and Telegraph Works Co., Limited. The visit is noteworthy because of the great disinclination evinced by British rubber manufacturers to allow visitors to go through the works. Messrs. Siemens & Co., the electric cable makers, are an exception to this, but it is the common thing to see in the waiting room some such notice as "Visitors are respectfully informed that they cannot be admitted to the works."

BY the death at Cannes in the spring of Mr. T. G. Douglas, Sr., the North British Rubber Co., Limited, has lost the chief guiding spirit in its works management. For more than 40 years the deceased had control of the manufacturing operations, coming over from America somewhere in the fifties.* The circumstance which led to the advent of Mr. Douglas in Edinburg and the energy which he showed in widening the scope of his company's operations, form a very prominent chapter in the life history of the big Edinburg factory. It is perhaps hardly necessary to say that the deceased must not be confounded with his son, who has been for many years manager of the proofing department in the works.—The official announcement made by the Hyde Rubber Works, Limited, to the effect that Mr. G. W. Dawes had relinquished his position in the management, came in the light of a surprise to many, seeing what a prominent part he had taken in the foundation of the present company.—I am glad to be able to say that Mr. Coutts, of the Erwell and Eastern Rubber Co., Limited, has recovered from his somewhat prolonged illness, and is back again controlling the works management.—Mr. J. E. Baxter of the Leyland and Birmingham Rubber Co., Limited, has returned to England after a lengthy tour in South Africa. I gather that there is no project on hand to start the rubber manufacture in the new colonies, though of course there are great potentialities for retail business development.

* Mr. Douglas went to Edinburg from the factory of L. Candee & Co. (New Haven, Connecticut), the oldest rubber shoe factory in existence.—THE EDITOR.

ELECTRICAL
RAILWAY
DANGER.

TRADE
JOTTINGS.

PERSONAL
MENTION.

RUBBER
SPONGE.

RUBBER
PAVEMENTS.

SIDE SLIP
TRIALS.

CONGO
MAL-ADMINISTRATION.

THE RUBBER PLANTING COMPANIES.

MEXICAN TROPICAL PLANTERS' CO.

[Plantation "Columbia"; Postoffice, Santa Lucrecia, state of Vera Cruz, Mexico. Office: Williamsport, Pennsylvania.]

THIS company, originally incorporated in Missouri in 1898, with headquarters at Kansas City, has been reorganized by its own shareholders, with an increase of capital from \$200,000 to \$500,000, and incorporated under the laws of Delaware. The object is to provide capital for the development of another tract of the company's large holdings of land. It is the intention to plant 500 acres additional to rubber, to plant more sugar cane and enlarge the cane mill, and to increase the number of cattle. The company's headquarters are removed to Williamsport, Pennsylvania, where a considerable part of the capital is held, and there is a new list of officers. *George D. Moore*, of Philadelphia, state agent for Pennsylvania of the Travelers' Insurance Co., becomes president; *John G. Reading*, president of the Susquehanna Trust and Safe Deposit Co. of Williamsport, is vice president, and *Riley W. Allen*, of Williamsport, secretary and treasurer. *Delbert J. Haff*, of Kansas City, one of the founders of the company and formerly its president, remains on the board, as also does *Robert D. Evans*, a former president of the United States Rubber Co. *Louis Kunz* remains plantation manager.

THE TEHUANTEPEC RUBBER CULTURE CO

[Plantation "Rubio", canton of Manatitlan, state of Vera Cruz, Mexico. Office: No. 81 Wall street, New York.]

AT the annual meeting of shareholders of this company, at their registered offices in New Jersey, on June 15, the board was reelected. A favorable financial report was presented, showing cash expended to date in developing the plantation, \$436,424.46; cash assets, \$71,152.12, and subscription contracts sufficient for carrying out the work of the company during the development period. A report from the resident plantation manager, *Mr. A. B. Luther*, gave an encouraging account of the progress of plantation work—growth of trees of former plantings, new planting this year, and general improvement work. The Tehuantepec company, in common with several other planting companies on the isthmus of Tehuantepec, are arranging for the importation of Japanese laborers.

ISTHMUS PLANTATION ASSOCIATION OF MEXICO.

[Plantation at Del Corte, district of Juchitan, state of Oaxaca, Mexico. Office: Herman building, Milwaukee, Wisconsin. [See THE INDIA RUBBER WORLD, July 1, 1903, page 337.]

THE annual inspection this spring was made by *Wilmer Sieg*, a Milwaukee business man chosen by the other shareholders for the purpose. He reports the acreage improved, to the end of 1903, at 3474, with 1813 fully planted. The number of trees and plants placed to date has been:

	1900.	1901.	1902.	1903.	Total.
Rubber.....	4,332	41,678	48,130	115,208	209,348
Coffee.....	117,774	73,562	46,908	12,403	250,647

Also, 1268 cacao plants set out in 1901 and 7337 bananas and 15,000 pineapples in 1902. The roadmaking had progressed to 78,272 meters [=about 48½ miles]. A list of 50 plantation buildings is given, including 26 for laborers. The number of laborers, exclusive of contract work, was 223 in 1902 and 254 in 1903. The gross proceeds of "side crops"—principally corn—are given at \$48,561.04 (Mexican), and the net proceeds, applicable to dividends, at \$39,402.81. Over 1100 acres were planted in corn in 1903. The coffee is beginning to bear. Land has been cleared for sugar cane and additional rubber.

COLISEO SUGAR PLANTATION CO.

[Plantation "Coliseo," state of Vera Cruz, Mexico. Office: 408-409 Pabst building, Milwaukee, Wisconsin.]

INCORPORATED under the laws of Wisconsin and Mexico; capital \$500,000. Own 5000 acres in Vera Cruz, near the National Tehuantepec railway. Have issued 5000 twenty year plantation bonds, offered at \$300 cash, or on time, to provide for planting India-rubber and sugar, principally, with perhaps other crops. Officers: *Dr. H. A. Wolter*, Green Bay, Wis., president; *A. W. Priest*, Appleton, Wis., vice president; *D. C. Burdick*, Oshkosh, Wis., secretary. Plantation conveyed to Royal Trust Co. (Chicago) during development period.

PROCEEDS OF RUBBER PLANTING IN CEYLON.

MR. H. V. BAGOT, manager of Arapolakanda estate, in the Kalutara district, Ceylon, writing to THE INDIA RUBBER WORLD, in regard to recent sales of Ceylon cultivated rubber at 5s. 4d. per pound, says that half the present prices would give the planters there a fine profit. He says: "Last year I got 4 shillings all round, including scrap, on 4300 pounds, off just under 3000 trees." The total proceeds would equal \$4185.19, in United States currency, or an average of about \$1.40 per tree. *Mr. Bagot* has about 15 acres of productive rubber trees, planted 200 to the acre, and these figures indicate a return of \$280 per acre. He hopes this year to collect 5000 pounds of rubber from the same trees.—The Arapolakanda estate, owned by the Eastern Produce and Estates Co., Limited, is represented at the St. Louis exposition by an exhibit of their India-rubber, green teas, and cloves, in the Ceylon Court.

CEYLON PLANTERS' RUBBER SYNDICATE, LIMITED.

AT the fourth annual meeting, at Hatton, in April, the report for 1903 showed that 320 acres were in rubber under 3 years, 115 acres in rubber under 2 years, and 100 acres in rubber under 1 year—total, 535 acres. The total expenditure to the end of 1903 reached 166,739 rupees [= \$54,095.81, United States currency]. The expenditures during the year were unexpectedly large, owing to the wetness of the season.

RUBBER ON THE YATADERIA TEA ESTATE.

AT the annual meeting of the Yataderia Tea Co. of Ceylon, Limited (Colombo, March 12), it was stated that at the end of 1902 they had 55,000 Pará rubber trees, of various ages, and a new census was being taken. During 1903 their tea fields were planted with Pará rubber seed at stake, 30×30 feet. [The "Ceylon Handbook" gives their acreage of tea at 981.] The mature trees have been only lightly tapped, so as not to affect the seed crop; 404,000 seeds realized 2459 rupees [= \$798], the balance being put into nurseries for use in 1904. The rubber collected amounted to 183 pounds, which sold for 512 rupees [= \$166].

UDAPOLLA RUBBER CO., LIMITED.

AT the shareholders' first annual meeting (Colombo, Ceylon, May 3) it was reported that operations had begun on July 1 last; that up to December 31 150 acres had been cleared and 30 acres planted to rubber, which was growing well; that the nurseries contained rubber seedlings sufficient to plant the remaining cleared area; and that since the beginning of the year progress had been made with the additional planting. It was voted to issue treasury shares to provide for clearing and planting 150 acres additional, on the company's estate, which are regarded as suitable for rubber. Directors: *W. S. T. Saunders*, *T. C. Huxley*, *F. L. Clements*, *A. L. Hine-Haycock*.

MAKING GUTTA-PERCHA FROM LEAVES.

AT the annual meeting of the shareholders of the Nederlandsche Gutta-Percha Maatschappij (Dutch Gutta-percha Co.), held at The Hague, on May 7, the report of the board of directors for the calendar year 1903 was presented, from which the details which follow are derived.

Many improvements had been made during the year in the factory of the company at Singapore, for the extraction of Gutta-percha from leaves, by the Ledebor process. The working capacity had been almost doubled, now being equal to handling more than 100 pikuls [1 pikul = 133½ pounds] of leaves in 12 hours. The capacity is to be still further increased by the addition of the machinery acquired from the Dutch India Gutta-percha Co., in liquidation, and formerly used by them on Boeroe island. During the year the Singapore factory was idle 59 days.

During the early part of the year there was difficulty in obtaining leaves, due to prohibitory taxes and other restrictions on collecting leaves in Malacca and Sarawak, whence large quantities had been received previously. Representatives of the company went through Dutch Borneo and Sumatra, making contracts for leaves with the native chiefs and other landowners, and also with the sultan of the Riou-Lingga archipelago. Rules and regulations for the collection of leaves have been established and premiums offered for the planting of Gutta-percha species. Reports have been received that plantations have already been started. The results from the new arrangements for securing leaves were visible only during the latter half of 1903.

The Gutta-percha product has been improved, the yield varying from 1.05 per cent. to 3.5 per cent. by weight, according to the source of the leaves. The Gutta-percha produced during the year was worth 215,000 florins [= \$86,430]. The company's machinery for cleaning raw Gutta-percha was little used during the year, owing to the depreciation in the Gutta-percha market, but it is intended to resume this branch of the company's work.

The company own two small steamers, for the transporting of leaves—one in service in the Riou-Lingga archipelago and the other in the Barito river district, in Borneo. In the other districts service is by means of chartered steamers.

The company have continued the planting of Gutta-percha in the regency of Preanger, in Java. In December about 60,000 young shoots were planted. Mention is made of an intended planting of about 88 acres this year, and the purchase of considerable additional land. The plantations are reported in good condition, though better results have been obtained from seedlings than shoots or stumps. There are now planted about 245 acres.

The fiscal report showed a profit for 1903 of 38,746 florins [= \$15,576]. But there was a deficit at the beginning of the year of 107,779 florins [= \$43,327], which is thus reduced to 69,033 florins [= \$27,751] and it is hoped that the deficit will be wiped out during the present year. Reports from Singapore indicated a profit of about 90,000 florins since January 1.

The directors were authorized to issue the treasury stock when this should appear desirable, though it was stated that no present necessity exists. [For a former report, see THE INDIA RUBBER WORLD, July 1, 1903—page 337.]

THE value of exports of rubber from Madagascar, according to an official report, increased from 545,630 francs [= \$105,307] in 1902 to 2,594,110 francs [= \$500,663] in 1903. No explanation of the increase is given.

PRODUCTION COST OF INSULATING TAPE.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Referring to the article in your May number on the cost of the manufacture in insulating tape, I beg to take issue with it and add a little to it.

Your correspondent says that the cheapest tape costs \$.0886 when made with a compound costing 5 cents per pound and using 4 pounds compound to 1 pound of cotton. No 5 cent calender compound has ever been made that will show better than 3 pounds to 1 for the average day's run, making the cost \$.0983. I do not consider "spreader" tape at all, as uncured naphtha containing goods will not stand outside exposure and it is a mistake for such material to be offered as insulating tape except for inside use.

To the cost (crude material) of \$.0983 should be added 3½ per cent. for wasted cloth and compound and the waste which occurs in cutting up tape, making the net cost of the cut material \$.1017 per pound.

Your expert has allowed too little for "interest." He should add a 6 per cent. dividend on the \$75,000 capital that would always be involved in an annual production of 500,000 pounds of tape. That is as much of a "cost" as the "labor," and a profit above that of not less than 10 per cent. should be obtained for "contingencies," as any tape manufacturer doing \$100,000 business per annum will at all times carry a contingent liability of from \$10,000 to \$20,000 in the notes of his customers and the 10 per cent. "contingent" profit is none too much for insurance, as shown by the failures of electrical supply dealers during the past five months.

Your contributor has allowed \$1143 for power. The goods produced could not have been made on day runs with less than 150 HP., and \$6000 would be nearer right. No item of "repairs and depreciation" appears in this cost and the item should be not less than \$2500.

These items, added to those your correspondent mentions, bring up the cost per pound to \$.236 in any coal burning factory in America, with experimental work and returned goods still to be accounted for. This is with cotton cloth at the price your correspondent figured it.

It is a sad fact that several rubber manufacturers are selling electrical tape to-day at prices as low as 18 cents per pound. Some of them sell bias tape as cheaply as the straight and the former costs 3 cents per pound more than the latter. Some are selling white tape as cheaply as the black, when the white costs 5 cents more to make. Some sell tape in oiled paper at the same price they get for it when wrapped in heavy tinfoil and pasteboard boxes, whereby they lose just about 1½ cents per pound.

Competition may be the "life of trade," but when competition results in prices from 10 to 20 per cent. below cost, it simply shows that the rubber trade has its share of men who do business on their first impressions instead of actual conditions, and let successful departments of their business bear the utterly useless losses of an unsuccessful department. Yours very truly,

C. E. FARRINGTON,
Massachusetts Chemical Co.

Boston, June 20, 1904.

THE INDIA RUBBER WORLD has received, through the courtesy of Messrs. Witt & Co., of Manáos, Brazil, a series of handsome picture post cards, based upon recent photographic views of the city of Manáos and of rubber trading stations and *seringuals* on the upper tributaries of the Amazon, the whole presenting a better idea of some features of the rubber business than any pictures that have come to hand hitherto.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED MAY 3, 1904.

- N**O. 758,627. Hose coupling. T. F. Downing, Chicago.
 758,643. Portable syringe. J. Haigh, Wetmore, assignor to the McPike Drug Co., Atchison, Kansas.
 758,673. Vaginal syringe. C. W. Meinecke, Jersey City, N. J.
 758,851. Playing ball [for golf]. F. H. Richards, Hartford, Conn.
 758,862. Vulcanizer door locking device. E. C. Shaw, assignor to The B. F. Goodrich Co., both of Akron, Ohio.
 758,863. Compound hydraulic vulcanizing press. E. C. Shaw, assignor to The B. F. Goodrich Co.
 758,864. Apparatus for preparing, handling, and vulcanizing tires or other rubber products. E. C. Shaw, assignor to The B. F. Goodrich Co.
 758,865. Apparatus for preparing, handling, and vulcanizing tires or other rubber products. E. C. Shaw, assignor to The B. F. Goodrich Co.
 758,885. Armor for pneumatic tires. J. W. Aylsworth, East Orange, N. J.
 758,905. Packing [with rubber core]. H. T. Evans, New York city.
 758,930. Fountain pen. G. S. Parker, Janesville, Wis.
 758,934. Fountain pen. J. S. Purdy, Brooklyn, New York.
 758,956. Hose coupling. G. B. M. Buzzell, Boston.
 758,985. Hose coupling. W. Liebl, Pittsburgh, Pa.
 759,017. Vehicle wheel [with cushion tire]. C. Rondell, Minneapolis, Minn.
 759,084. Surgical operating cushion. A. C. Eggers and E. Stahl, assignors to Goodyear's India Rubber Glove Manufacturing Co., Naugatuck, Conn.
 759,123. Means for removing the rubber tires of bicycles or other vehicles. S. Nicholson, assignor of one half to W. H. Paterson, both of Gore, New Zealand.
 759,124. Vehicle wheel [with solid rubber tire]. W. C. Oswald, Kalamazoo, Mich.
 759,141. Pneumatic renovator [for house cleaning]. J. S. Thurman, St. Louis.
 759,195. Vertical vulcanizing press. E. C. Shaw, assignor to The B. F. Goodrich Co., both of Akron, Ohio.
 759,196. Horizontal vulcanizing press. E. C. Shaw, assignor to The B. F. Goodrich Co.

ISSUED MAY 10, 1904.

- 759,324. Hose coupling. M. P. Stevens, East Orange, N. J., assignor to Safety Car Heating and Lighting Co.
 759,342. Pessary. F. H. Brunig, Kansas City, Mo.
 759,430. Hand stamp. M. R. Flynn, Danville, Va.
 759,452. Pneumatic carpet renovator. A. Lotz, assignor to Sanitary Compressed Air and Suction Dust Removing Co., both of San Francisco.
 759,455. Rubber tired wheel. A. H. Marks, Akron, Ohio.
 759,456. Rubber tire [consisting of a relatively tough and stiff base portion and a resilient tread portion, said two parts being interlocked by means of projections on one which enter the other]. A. H. Marks, Akron, Ohio.
 759,490. Tooth brush. J. A. Yates, Rockford, Ind., assignor to Florence Manufacturing Co., Northampton, Mass.
 759,577. Dress shield. I. L. Wild, Brooklyn, New York.
 759,611. Cushion tire wheel. W. H. Holmes, Columbus, Ohio.
 759,636. Overshoe for horses. J. T. Ryan, St. Louis.
 759,753. Artificial foot. J. F. Rowley, Chicago.
 759,755. Storm shield for vehicles. J. J. Russell, Jr., Deepwater, Mo.

ISSUED MAY 17, 1904.

- 759,843. Sprinkler or minimizer. R. B. Adams, New York city.
 759,882. Invalid bed. J. Hall and Hattie A. Paddleford, North Monroe, N. H.
 759,932. Pneumatic tire guard. T. L. Sturtevant, Quincy, and T. J. Sturtevant, Wellesley, Mass.
 760,004. Striking bag. A. Lindsay, East Orange, N. J.
 760,109. Wheel tire. J. P. Donovan, Westfield, Mass.
 760,136. Pneumatic cushioned vehicle wheel. D. F. Minahan, Jr., Orange, N. J.
 760,147. Tire for vehicle wheels. C. J. Pigeon, Paris, France.

- 760,237. Vehicle tire. L. G. Nilson, assignor of two thirds to M. and H. S. Fischer, all of New York city.
 760,254. Automatic weather strip. L. Rottler, St. Louis.
 760,285. Vehicle wheel. H. Watkins and W. A. Menge, Utica, N. Y.
 760,339. Finger pad. J. G. Marsh, Manchester, N. H. [Illustrated in THE INDIA RUBBER WORLD, April 1, 1904—page 239.]
 760,374. Elastic exercising apparatus. T. Belvoir, New Southgate, England.
 760,392. Attachment for rugs [to prevent slipping]. S. Gilliam, Buffalo, N. Y.

Reissue.

- 12,219. Rubber tread. R. E. Foster, East Boston, Mass., assignor by mesne assignments to the Foster Rubber Co. [Original No. 695,298, dated March 11, 1902.]

Trade Mark.

- 42,640. Insulating tape. The Standard Paint Co., New York city. *Essential feature.*—The letters and character P & B. Used since Feb. 15, 1890.

ISSUED MAY 24, 1904.

- 760,710. Hose coupling. J. E. Simpson, Frederic, Mich.
 760,800. Rubber dam holder and cutter. F. R. Nice, Lansing, Mich.
 760,829. Fountain pen. O. E. Weidlich, Cincinnati.
 760,856. Hose coupling. R. M. Dixon, East Orange, N. J., assignor to Safety Car Heating and Lighting Co.
 760,880. Waterproof suit. N. B. Lawson, Muskegon, Mich.
 760,948. Valve for swimming bag. H. A. Ayvad, Hoboken, N. J.
 760,952. Hose puller and wringer. J. A. Britton, Bethlehem, Pa.
 761,024. Coupling for airbrake hose. A. F. Allan and J. A. Lenhoff, Wilmington, Del.
 761,054. Rubber belt. J. W. Blodgett, assignor to The N. Tire Co., both of Chicago.

Trade Mark.

- 42,680. Rubber tires for vehicles. J. M. MacLulich, London, England. *Essential feature.*—The word SIRDAR. Used since Sept. 28, 1898.

ISSUED MAY 13, 1904.

- 761,078. Dish washer. Darlington T. Jones, Chicago, assignor, by mesne assignments, to the Domestic Utilities Co., New York city. [Illustrated in THE INDIA RUBBER WORLD, May 1, 1904—page 280.]
 761,129. Method of covering elastic bands. J. and F. N. Ashworth, Somerville, Mass.
 761,151. Machine for attaching, tightening, and clamping wire hose bands. W. A. Cummings, Spokane, Wash.
 761,162. Steam hose coupling. E. H. Gold, Chicago.
 761,217. Rectal syringe. E. A. Gilbert, Jamestown, N. Y.
 761,228. Vapor bath. C. E. Hurley, Grand Rapids, Mich.
 761,235. Catheter [having an enclosed air cell in its distal end]. I. F. Kepler, Akron, Ohio, assignor to The B. F. Goodrich Co.
 761,335. Vehicle tire. J. A. Swinehart, Akron, Ohio.
 761,367. Tree tapping tool [for use on rubber trees]. W. E. Fish, Racine, Wis.
 761,446. Inflating pump for pneumatic tires. N. F. Canepa, St. Louis.
 761,457. Tire fastening device. J. T. Dickey and C. D. Derry, Barberton, Ohio.
 761,491. Pneumatic tire cover. T. Houben, Verviers, Belgium.
 761,505. Faucet connection. B. D. Knickerbocker, assignor to Knickerbocker Manufacturing Co., both of Chicago.
 761,506. Crutch [with rubber ground pad]. A. G. Kreimer, Cincinnati.
 761,520. Calendering or friction coating fabrics with rubber. P. M. Matthew, Edinburgh, Scotland.
 761,555. Hose coupling. J. W. Stuart, Plain City, Utah.
 761,590. Playing ball [for golf]. Eleazer Kempshall, Boston.

Trade Marks.

- 42,739. Flexible insulated electric light cords. F. S. Minott, New York city. *Essential feature.*—The representation of cords twisted together and a rectangular blank space appearing in the representation approximately at the middle thereof. Used since Jan. 2, 1904.
 42,740. Insulated wires and cables. F. S. Minott, New York city. *Essential feature.*—The word GRICO. Used since Jan. 2, 1904.

[NOTE.—Printed copies of specifications of United States patents may be obtained from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1904.

[* Denotes Applications from the United States.]

- 7,772. R. A. Smith, London. Interchangeable boot heel. Apr. 2.
 7,889. H. Sidebottom, Manchester. Golf ball. Apr. 2.
 7,795. V. de Karavodine, London. Utilization of waste vulcanized rubber. (Communicated from France.) Apr. 2.
 7,810. F. J. Chary, London. Elastic tire. (Communicated from France.) Apr. 2.
 8,006. A. Whiteway and C. Macintosh & Co., Ltd., Manchester. Improvement in tiles. Apr. 7.
 8,007. Patrick Millar Matthew, Edinburgh. Manufacture of revolving heel pad and apparatus therefor. Apr. 7.
 8,025. F. H. Sterling, London. Pressure indicating gage for pneumatic tires. Apr. 7.
 8,072. P. Cruickshank, Glasgow. Manufacture of golf balls. Apr. 8.
 8,086. J. Galbraith, London. Solution injector for tire repairs. Apr. 8.
 8,109. G. E. Heyl-Dia, London. Pneumatic tire. Apr. 8.
 8,166. M. Haworth, Halifax. Pneumatic tire. Apr. 9.
 8,242. R. B. Cohen and A. J. Killeen, Birmingham. Fountain pen. Apr. 11.
 8,281. E. P. Youngs, London. Pneumatic tire for vehicles. Apr. 11.
 8,317. E. D. A. Mathey, London. Elastic wheel for vehicles (Communicated from France). Apr. 11.
 8,320. C. Menke, London. Extensible and detachable side rim for wheel having rubber tires. Apr. 11.
 8,371. C. W. Gittins, Liverpool. Boot heel and sole. Apr. 12.
 8,424. B. J. Corder, London. Pneumatic tire. Apr. 12.
 8,586. W. Hill, G. W. T. Leeson, and The County Chemical Co., Ltd., Birmingham. Portable tire repairing vulcanizer. Apr. 14.
 8,587. G. J. Washbourne, Birmingham. Pneumatic tire. Apr. 14.
 8,670. W. J. Cooper and J. P. Jorgensen, Dursley, Gloucester. Pneumatic tire. Apr. 14.
 8,691. Jan Mijs Az, London. Improved treatment of vulcanized Caoutchouc. Apr. 15.
 8,697. J. Crosland and British Insulated and Helsby Cables, Ltd., London. Improvements in golf balls and manufacture of the same. Apr. 15.
 8,809. J. Shepherd, London. Elastic tire. Apr. 16.
 8,813. G. C. Mandelberg, London. Manufacture of waterproof fabrics. Apr. 16.
 8,828. W. Drury and F. H. Medhurst, London. Pneumatic tire and rim therefor. Apr. 16.
 8,893. I. Guiot, Liverpool. Resilient wheel. Apr. 18.
 8,898. F. J. Best, London. Prevention of slide slip and puncture of tires.
 8,900. A. von Lude, London. Means of securing tires to motor wheels. Apr. 18.
 8,928. J. L. Brown and B. King, London. Tire protectors. Apr. 19.
 8,940. C. Challiner, Manchester. Vehicle tire. Apr. 19.
 9,004. W. Bentley, Liverpool. Motor tire. Apr. 19.
 9,010. P. J. Neate, London. Means of piercing small rubber articles. Apr. 19.
 9,047. T. Gare, Manchester. Vehicle tire. Apr. 20.
 9,094. A. Ellis, London. Heel pad. Apr. 20.
 9,100. J. C. Verey and J. B. Bessey, London. Resilient tire. Apr. 20.
 9,121. P. Dick, London. Mold for golf balls. Apr. 20.
 9,148. E. G. Pett, Tramore, Ireland. Elastic airtight bottle cap. Apr. 21.
 9,160. F. W. Farr and J. Power, Northampton. Protector for boot heel. Apr. 21.
 9,188. R. Price, London. Non skidding solid tire for motors. Apr. 21.
 9,217. A. H. Brancroft, Church, Lancashire. Detachable band for pneumatic tires. Apr. 22.
 9,234. J. Butler, Manchester. Pneumatic tire and wheel rim. Apr. 22.
 9,278. T. Sloper, London. Elastic tire. Apr. 22.
 9,281. C. Marter, London. Manufacture of golf balls. Apr. 22.
 9,318. J. B. Scammell and F. A. Muskett, London. Insulating and waterproofing composition. Apr. 23.
 9,321. Deborah Nemerovsky, Birmingham. Tire valve. Apr. 23.
 9,330. S. de Pont, Manchester. Golf ball. Apr. 23.
 9,400. H. W. Hepburn, Llandudo, Wales. Pneumatic tire. Apr. 25.
 9,432. R. W. Sampson, London. Hot water bottle. Apr. 25.
 9,466. W. Page and W. Jones, London. Wheel rim and tire. Apr. 25.
 9,505. J. and J. Cairns, Glasgow. Tire. Apr. 26.
 9,510. H. J. Graisman, London. Elastic fabric. Apr. 26.
 9,556. T. G. Williams, Liverpool. Hose coupling. Apr. 26.
 6,582. I. G. Samuel and A. Baker & Co., Ltd., London. Fountain pen. Apr. 26.
 9,631. A. Lafargue, London. Resilient tire. Apr. 27.
 9,644. W. Youtlen, London. Tire for vehicles. Apr. 27.
 9,827. W. C. Wilkinson, London. Atomizer for medical purposes. Apr. 29.
 9,857. J. Black and C. Davies, Liverpool. Pneumatic tire for cycles and vehicles. Apr. 29.
 10,092. E. L. Curbishley, Manchester. Design to be used on pneumatic tires. May 3.
 10,096. H. Thomson, Locke. Pneumatic and cushion tire. May 3.
 10,169. W. P. Thompson, Liverpool. Mold for pneumatic tires. (P. Eichmann, Germany). May 3.
 10,175. H. J. Haddan, London. Vaginal syringe. (Meinecke & Co., New York). May 3.
 10,253. G. F. Mason, London. Pneumatic tire. May 4.
 10,267. J. E. Davidson, London. Boot heel. May 4.
 10,274. E. F. Piers, Bart., London. Resilient wheel. May 4.
 10,277. C. Dutordoir, London. Detachable tread for pneumatic tire. May 4.
 10,315. A. Pearse, London. Cycle and motor tire. May 5.
 10,404. A. I. Rath, London. Method of reclaiming rubber. May 6.
 10,405. A. I. Rath, London. Mold for vulcanizing rubber tires and solid or hollow cords and strips. May 6.
 10,432. J. McConechy, Glasgow. Pneumatic tire for vehicles. May 6.
 10,433. W. B. Lakeman, Devonport. Pneumatic cleaner for pipes and tubes. May 6.
 10,442. John Hancock Nunn, London. Means of securing hard and soft rubber tires to rims. May 6.
 10,520. A. E. Moore, London. Boot heel. May 7.
 10,522. R. B. Black, London. Protector for rubber and ink erasers. May 7.
 10,596. W. Bradley, Manchester. Pneumatic tire for cycles or motors. May 9.
 10,710. M. R. Zochlin, Berlin, Germany. Elastic tire with imbedded spring ring. May 10.
 10,712. W. G. Weston and The "Imperial" Tyre and Rubber Co., Ltd., London. Non skidding tread for tires. May 10.
 10,718. H. and J. Howarth, Manchester. Non slipping cover for tires. May 10.
 10,859. W. B. Hartridge, London. Pneumatic tire. May 11.
 10,931. A. F. Cole, Kidderminster. Fountain pen. May 12.
 10,947. M. Foggarty and J. Tennant, Manchester. Fountain pen. May 12.
 11,029. I. Frankenburg & Sons, Ltd., R. J. Frankenburg, and F. H. Betteridge, Manchester. Golf ball. May 13.
 11,036. T. Cummings, Nottingham. May 13.
 10,044. J. S. Crowley, Manchester. Fountain penholder. May 13.
 11,100. F. Barlow, London. Tire for cycles and vehicles. May 13.
 11,132. T. Hartley, Manchester. Pneumatic boot tree. May 14.
 11,199. J. C. Maxwell, Glasgow. Heel for boots. May 16.
 11,231. T. A. Jenner, London. Prevention of side slipping of motor tires. May 16.
 11,244. C. De Büren, London. Improved construction and manufacture of golf balls. May 16.
 11,304. J. Galbraith, London. Repair device for tire punctures. May 17.
 11,309. S. W. Martyn, Sheffield. Device for connecting rubber tubes. May 17.
 11,297. R. McGregor, Glasgow. Elastic tire for cycles and motors. May 17.
 11,318. S. W. Wharton, London. Boot heel. May 17.
 11,340. J. Pollock, London. Valve for pneumatic tires. May 17.
 11,370. J. J. Harrison, London. Means of securing heel pads to boots. May 17.
 11,374. A. Harrison and F. Smart, London. Elastic tire. May 17.
 11,417. S. J. Barlett and J. Tumulty, Manchester. Manufacture of tire covers. May 18.
 11,420. J. Woodhead & Sons and S. Sheard, Leeds. Apparatus for mounting rubber tires. May 18.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, APRIL 20, 1904.]

- 28,227 (1902). Toe cap for boots. R. Schwarzwald and M. Urbahn, Hamburg, Germany.
- * 28,392 (1902). Massage appliance. L. Casper and Hygeia Vibratory Co., Chicago, Illinois.
- * 28,393 (1902). Bottle stopper. W. F. Dorman, New York.
- 28,514 (1902). Pneumatic tire. C. Jenatzy, Brussels, Belgium.
- 28,522 (1902). Pneumatic tire. H. J. Haddon, London. (J. Lacroix, Paris.)
- 28,625 (1902). Revolving heel pad. A. Briggs, Market Harborough.
- 28,659 (1902). Foot protector for animals. C. W. Herbert, Leicester.
- 28,750 (1902). Golf ball. W. H. and H. Southon, London.
- * 28,771 (1902). Elastic tire. C. W. Hunt, New York.
- 28,888 (1902). Pneumatic tire. W. H. Barratt, Bristol.

[ABSTRACTED IN THE OFFICIAL JOURNAL, APRIL 27, 1904.]

- 129 (1903). Respirator. B. Loeb, Cologne, Germany.
- 147 (1903). Heel protector. E. W. Wooders, Bredbury, Cheshire.
- 168 (1903). Elastic tire. G. Swindin, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY 4, 1904.]

- 337 (1903). Change protector for solid cushion or pneumatic tire. H. Bremer, Neheim a/Ruhr, Germany.
- 366 (1903). Apparatus for removing dust from carpets. S. Simmons, London.
- 382 (1903). Heel protector. F. Town, Halifax.
- 489 (1903). Pneumatic suspension wheel for vehicles. P. Weir, Bristol.
- 600 (1903). Surgical truss. J. Wibler, Wiesbaden, Germany.
- 631 (1903). Elastic tire [with metal springs inside a rubber cover]. G. S. Ogilvie, Woodbridge, Suffolk.
- 676 (1903). Elastic tire. E. E. Hill, Walton-on-Thames.
- * 681 (1903). Hypodermic syringe. A. J. Boulton, London. (T. J. Lynch, Marietta, Pennsylvania.)
- 753 (1903). Pneumatic tire cover. [The "Palmer Cord" feature described in THE INDIA RUBBER WORLD, January 1, 1904]. Christian H. Gray, Silvertown, and T. Sloper, Wiltshire.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY 11, 1904.]

- 801 (1903). Revolving boot heel. R., H. J., and E. W. Harris, Bristol.
- 815 (1903). Pneumatic tire. J. F. Pease and E. Schumacher, Darlington.
- * 841 (1903). Boot heel. M. Bray, Newton, Massachusetts.
- * 868 (1903). Vulcanizer for rubber stamps. R. H. Smith, Springfield, Massachusetts.
- 875 (1903). Pneumatic tire [with emergency air tube between the ordinary tube and the wheel rim]. G. C. Marks, London. (Communicated from New Zealand.)
- 1,094 (1903). Pneumatic tire [with protecting band]. V. Gallien, Paris, France.
- 1,126 (1903). Boot sole. H. Attneave, London.
- 1,139 (1903). Air cushion. A. Pulbrook, Hammersmith, Middlesex.
- 1,142 (1903). Respirator [for miners' use]. A. Pollard, London.
- 1,237 (1903). Pneumatic tire [with special rim]. R. Kronenberg, Ohligs, Prussia.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY 18, 1904.]

- * 1,277 (1903). Window strip. W. Steger, Marietta, Ohio.
- 1,282 (1903). Pneumatic tire [with means to prevent slipping]. J. H. W. Fitzgerald, London.
- 1,284 (1903). Apparatus for vulcanizing tire covers. F. Ornstein, Victoria, Australia.
- * 1,420 (1903). Pneumatic tire [with air chamber in sections]. C. Miller, Binghamton, New York.
- * 1,435 (1903). Elastic tire for vehicles. W. C. Lilly, Akron, Ohio.
- 1,546 (1903). Vehicle wheel [pneumatic cushions connected to the hub, with or without rubber tires]. A. F. Hawksley, Altrincham.
- 1,549 (1903). Pneumatic tire [formed from a number of separate rubber balls]. W. H. Sewell, Belfast.
- 1,715 (1903). Water bottle [with removable bottom to permit the insertion of ice]. C. Serre, Paris, France.
- 1,765 (1903). Inhaler. J. E. Arnold, London.
- 1,802 (1903). Non slipping pneumatic tire. J. Lees, Manchester.

[ABSTRACTED IN THE OFFICIAL JOURNAL, MAY 26, 1904.]

- 1,914 (1903). Pneumatic tire [capable of being ridden after the inner tube has been deflated]. M. Manuel, Mulhausen, Germany.

- 1,951 (1903). Solid rubber tire. J. D. Roots, London.
- 2,022 (1903). Solid rubber tire. S. J. Lilley and T. P. Buckton, Leicester.
- 2,049 (1903). Golf ball. A. B. Dexter, London.
- 2,073 (1903). Pneumatic tire [designed to be free from side slipping]. A. Prinzhorn, Continental Caoutchouc and Guttapercha Co., Hanover, Germany.
- 2,141 (1903). Pneumatic tire [wheel with two tires side by side]. A. Nicholson, Dublin.
- 2,181 (1903). Pneumatic tire. E. Midgley, London.
- 2,221 (1903). Pneumatic tire. J. E. Griffith, Upper Bangor, North Wales.

GERMAN EMPIRE.

PATENTS GRANTED.

- 152,520 (Class 34c) Elastic ring for brass buffing machines. Gustav Robinson, Dresden Lobtau. May 11.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 221,300 (Class 42b). Instrument for measuring diameters of rubber hose. Meyerhoff & Co., Cassel. Apr. 20.
- 222,771 (Cl. 30k). Nose abturator, consisting of a rubber bag provided with stiff longitudinal cut off channel. H. Middendorf, Magdeburg. May 4.
- 222,307 (Cl. 63e). Cellular tire. Albin Freiherr von Reitzenstein, Berlin. May 4.
- 222,571 (Cl. 63e). Tread for pneumatic or tires consisting of alternate cross plates of rubber and metal, to prevent skidding. O. Franzel and H. Sartorius, Bochum. May 4.
- 222,695 (Cl. 63e). Protective band for pneumatic tires in the form of segments wholly or partly of rubber. C. Birkenstock, Frankfurt a/M. May 4.
- 222,666 (Cl. 71b). Shoe laces of rubber, having a metal slide. K. Hossa, Mungeln. May 4.
- 222,610 (Cl. 72b). Rubber file head, provided with a protective plate. I. G. Schrodie, Ideal Sport- und Spiel Fabrik, Nürnberg-Schweinau. May 4.
- 222,731 (Cl. 15k). Press appliance for dyeing, consisting of a rubber roller for applying the color and an elastic plate for taking up and supplying the same. G. Tietze, Leipzig-Auger. May 11.
- 223,060 (Cl. 34b). Rubber collecting plate, for head waiters. W. Baskin, Karlsruhe i/B. May 11.
- 223,241 (Cl. 47f). Rubber coupling for hose. S. Taul, Aachen. May 11.
- 223,250 (Cl. 77f). Inflatable rubber figures which, by means of heavy material within them, may be made to stand. Gummi-fabrik bei Melle, Wortman & C. Borsch, Melle. May 11.

APPLICATIONS.

- 36,169 (Class 30d). Dental rubber plate. Rosa Bauer, Cologne. Apr. 20.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATE OF APPLICATION).

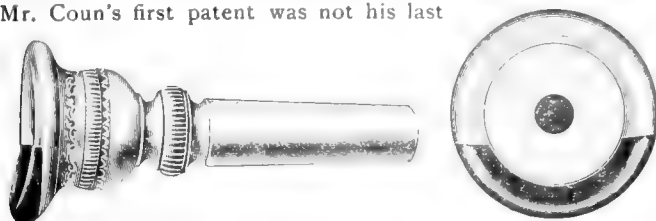
- 338,206 (Dec. 17, 1903). L. Nioré. Protector for pneumatic tires.
- 338,242 (Dec. 16, 1903). Ciceolini and Legoun. Anti-slipping pneumatic tire.
- 338,265 (Nov. 13, 1903). J. Merle. Extensor for the manufacture of pneumatic tires.
- 338,331 (Dec. 19, 1903). R. Haberland. Pneumatic tire.
- 338,341 (Dec. 23, 1903). C. Dutordoir. Anti-slipping band for rubber tires.
- 338,343 (Dec. 21, 1903). L. Lainé. Repair strip for pneumatic tires.
- 338,369 (Dec. 24, 1903). Salder. Rubber tire.
- 338,474 (Nov. 21, 1903). Foulquier. Jointed detachable rim for pneumatic tires.
- 338,501 (Dec. 19, 1903). Trooquette. Elastic tire.
- 338,604 (Dec. 11, 1903). Process of vulcanization for rubber tires.
- 338,630 (Dec. 2, 1903). M. Vivian. Anti-slipping tire.
- 338,669 (Dec. 29, 1903). W. E. Amsnon. Machine for covering or for insulating flat metallic wires.
- 338,729 (Dec. 18, 1903). E. J. Fort. Metallic protector or elastic metallic chamber, applicable to vehicle wheels.

[NOTE.—Printed copies of specifications of French patents may be ordered from R. Bobet, consulting engineer, 16, avenue de Villiers, Paris, at 50 cents each, post-paid.]

NEW GOODS AND SPECIALTIES IN RUBBER.

RUBBER CUSHION FOR CORNET MOUTHPIECE.

IT is asserted that without artificial aid few persons can become proficient cornet players. If lacking good facial muscular development, perfect jaw and teeth formation, or having thin lips, something must be done by art to make up for the defects. The use of India-rubber cushions for the mouthpieces of such instruments is not new; indeed, the success of what has become one of the largest factories in the world for making brass and silver musical instruments, may be credited to the invention by Mr. Charles G. Conn, of Elkhart, Indiana, of an application of rubber in this field. The idea is said to have come to him while, working as a jeweler, he was repairing a horn. At any rate, by the time his first patent had expired, in 1894, Mr. Conn was a millionaire, had been mayor of his town several times, was a member of congress, and owned newspapers at the national capital and elsewhere. But Mr. Conn's first patent was not his last.



SIDE VIEW OF MOUTHPIECE.

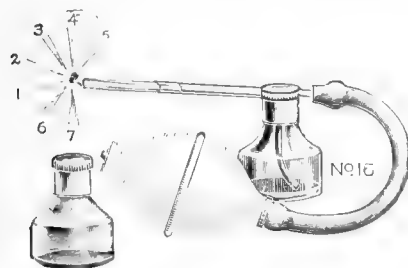
END VIEW.

[The dark shading in the cuts indicates the position of rubber cushions.]

one. The two cuts herewith illustrate a new "Compensating Cornet Mouthpiece," with flexible projecting cushion, for which United States patent No. 747,591 was issued December 22, 1903. "As no pressure [on the metallic mouthpiece] is needed to keep the lips from leaking or to reduce the unevenness of the lips to an even surface, the buccinator muscles are brought into use and given free control of the lip tissue, and the various tones are made with greater ease." [C. G. Conn, Elkhart, Indiana.]

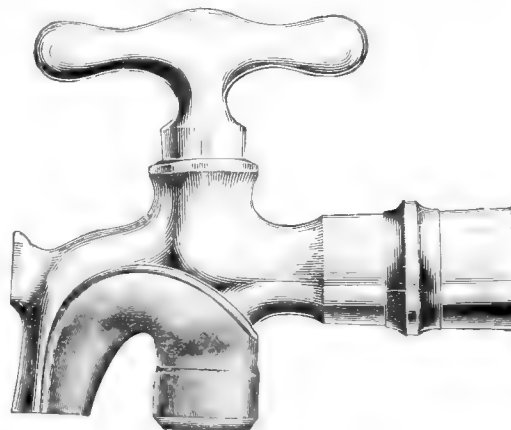
DE VILBISS UNIVERSAL ATOMIZER.

THE recognized prevalence of nasal catarrhal diseases renders desirable some means for effective self treatment by very many patients. Not less important than the prescription of a suitable remedy in any case is the choice of an atomizer which will give the necessary application to the affected parts, and this should be one which the patient can use conveniently and with satisfaction. Some of the advantages of the De Vilbiss Universal Atomizer—one style of which is illustrated herewith—are that it can be used to spray any liquid, oil, aqueous or alcoholic solution; the point can be turned in any direction; it will throw a spray from any bottle, or from a tumbler or other open receptacle; the connection is made to the bottle by a flexible cap; the force of the spray can be regulated easily; all parts are interchangeable, so that if one be broken, it can be replaced. The same principle is involved in construction of other devices made by the same company, including, for example, dental syringes. [De Vilbiss Manufacturing Co., Toledo, Ohio.]



STEELE'S PATENT RUBBER FAUCET GUARD.

THE object of this invention is to shield glasses from coming in contact with metal faucets, and thus to prevent the chipping and breaking of glasses and the dropping of chips into the beverage. It consists of a rubber guard made to fit all ordinary beer faucets, for instance, and is readily attached or detached from faucets. A reference to the illustration will readily show the rubber guard attached to an ordinary faucet. This appears to be a very practical article, for which a wide demand is in prospect. United States patent No. 739,031, granted September 15, 1903, to Andrew Steele. [Mattson Rubber Co., No. 26 West Broadway, New York.]



or detached from faucets. A reference to the illustration will readily show the rubber guard attached to an ordinary faucet. This appears to be a very practical article, for which a wide demand is in prospect. United States patent No. 739,031, granted September 15, 1903, to Andrew Steele. [Mattson Rubber Co., No. 26 West Broadway, New York.]

"PERFECTION" SAFETY VAPOR AND SHOWER BATH.

THE bath here illustrated serves the purpose of the vapor baths of the ancients, of which the ordinary Turkish bath has

for many years been the successor. But it renders unnecessary the expense and trouble of the Turkish bath; moreover, it can be taken regularly, in but a few minutes' time, in one's own house. The "Perfection" bath includes a water fountain which is filled with the pull of a nickel chain from the main supply, with either hot or cold water; a water mixing valve placed on the main standpipe for use when there is an unequal water pressure between the hot and cold water supply; and a coil steel spring balance attached to a wall

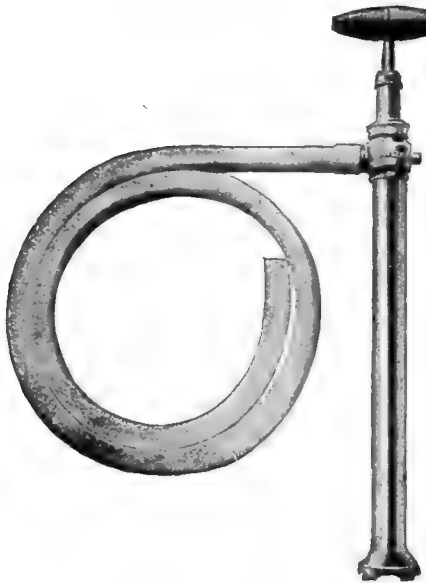


bracket and connected to a large curtain ring with brass sash ribbon. The slightest touch will raise or lower the curtain, it being so constructed as to remain at any height where placed. No plumbing is required in mounting this device over any bath tub; only two screws in the wall are needed to hold it in place.

The usual outfit complete includes white rubber curtain, stool, aluminum lamp, and coil spring balance. There may be obtained in addition a water fountain, including fine rubber hose, bulb, and syringe. The illustration herewith shows the fixtures in readiness for a shower bath; only a few moments are required for adjusting it for taking a vapor bath. [Vapor Shower Bath Co., Cox building, Rochester, New York.]

THE "WURKEZE" BILGE PUMP.

THE device here illustrated is intended for use on launches

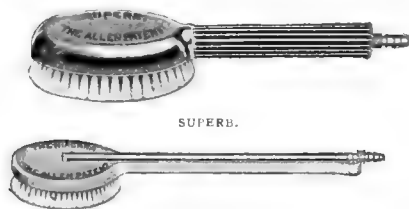


and small yachts. It is made of brass, with polished barrel, with hardwood piston handle, and a 5 foot length of hose attached. It is made in two sizes. No. 1 is 16 inches high, with a capacity of 6 gallons per minute; No. 2 with a height of 17 inches, has a capacity of 12 gallons per minute. At the bottom of the barrel a sieve is placed, to prevent the suction of foreign articles into the pump. [The Ma-

rine Hardware Co., Peabody, Massachusetts.]

THE ALLEN FOUNTAIN BATH BRUSH.

THE Allen fountain brushes, for use in hot or cold baths, are made of bristles, having backs perforated for the flow of water,

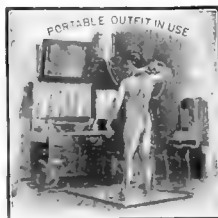


NIAGARA.
FOUNTAIN BRUSHES.

conveyed through the handles when connected by rubber tubing with the bathroom faucet.

The brushes are made

in various styles, one of those illustrated herewith, the "Superb", having back and handle of hard rubber. The other two styles shown have backs of hard wood. These brushes are intended to be sold with "outfits", including tubing and other accessories. A specialty is made of the portable outfit, for use in traveling, or in general where bathroom facilities are lacking. The supply of water in such cases is derived from an enamelled metal fountain or reservoir, arranged to be suspended from the wall; or, 3-quart rubber water bags may be used. The portable outfit includes also a "safety floor mat", made of waterproof material, 36" x 36" or 50" x 50", upon which the bather stands while taking a bath. These mats have upturned edges, or rim, the larger size holding 6 gallons of water. There is a special "shampoo" brush, and likewise brushes for horses and dogs. One feature of the outfits supplied with these brushes is a



SAFETY FLOOR MAT.

water shut-off and regulator—a small device, including thumb-screw, which is slipped over the rubber tubing to control the flow of water. These brushes have been on the market for some time, but the accessories have gradually been improved and their number increased, the latest addition being the bath mat, for which United States patent No. 745,553 was granted recently to Willard E. Allen. [The Allen Manufacturing Co., No. 436 Erie street, Toledo, Ohio.]

AYVAD'S "WATER WINGS"—A NEW VALVE.

A SMALL novelty which has met with a very wide sale in this country and abroad is that shown in the illustrations—Ayvad's Water Wings.

They are mentioned here

on account of their now

including an improved inflating

valve, for which

United States patent No. 760,-

948 has been granted to H. A.

Ayvad. The valve, which is

also illustrated herewith, consists of a metallic mouthpiece,

exposed at the outer surface

of the inflatable swimming

bag, and a flexible, compressible

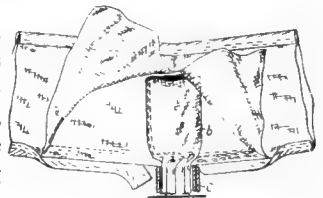
valve tube of woven fabric

attached to the mouthpiece and extending therefrom to be-

tween the compressible walls of the bag, the ends of the bag

binding being stitched to the edges of the valve tube. [The

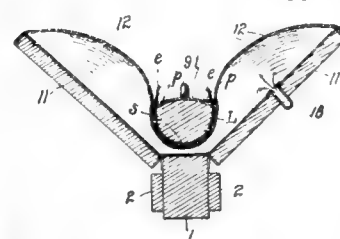
Ayvad Manufacturing Co., Hoboken, New Jersey.]



THE NEW VALVE.

APPARATUS FOR LASTING SHOE UPPERS.

THE cut herewith relates to a new apparatus for applying the outer rubber layer to a shoe upper, designed to dispense in a great measure with hand labor, and at the same time to insure uniform results. Under the existing method of construction of rubber uppers, the lining and the insole are

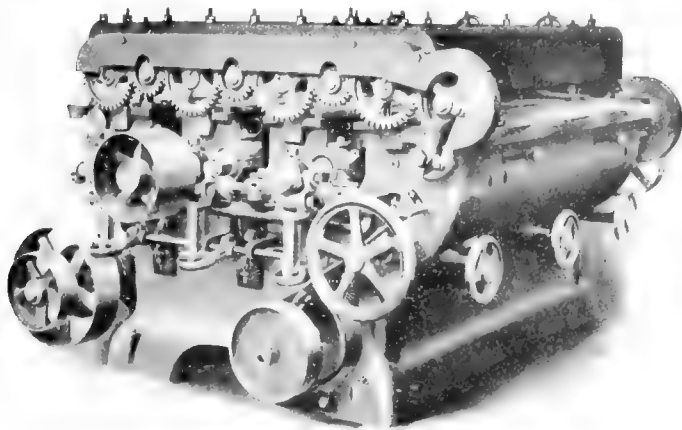


first mounted on a last supported right side up, the blank forming the outer upper layer being deftly passed by hand over the stockinet, beginning at the middle of the upper, then passing it forward and along the sides, and then rearward. But with the hands it

is not always possible to cause this layer to adhere uniformly throughout its entire area, and in consequence air will find a lodging place at points between the rubber layer and the stockinet, to be expelled eventually by a roller passed over the completed upper—an operation requiring considerable time. This new apparatus introduces a method of applying the rubber layer by pneumatic pressure, the rubber blank be caused to progressively adhere to the stockinet under the action of an inflatable bag or diaphragm (marked 12 in the cut), which in the process of inflation gradually envelops the last and stockinet mounted on it, such gradual envelopment forcing the rubber layer against the last and causing the same to adhere to the stockinet. United States patent No. 761,356, issued May 31, 1904, to William H. Burritt, of St. Louis.

BUFFING MACHINES FOR RUBBER WORK.

NEARLY every mechanical goods factory has more or less need for a machine for grinding or buffing rubber surfaces as, for example, in the grinding of printers' blankets, deckle straps, heavy rubber sheet stock, sheet tiling, and so forth. Such machines are frequently homemade contrivances, and, being usually single drum sanders, leave much to be de-



"ROYAL" BUFFING MACHINE FOR RUBBER SURFACES.
[Made by the Berlin Machine Works, Beloit, Wisconsin.]

sired as regards accuracy and perfection of working. The drum may consist of a rubber covered iron base, upon the surface of which sand paper is glued, but is quite as often a built up wooden cylinder on which the sand surface is formed by dusting the sand into a coat of glue applied to the wood. The cutting drum is generally supported on two stout posts, and immediately under it is placed a much smaller rubber covered roll for supporting the stock as it is being cut or ground. A pair of small rubber covered grip rolls placed in front of the cutting drum serve to regulate the feed of the stock through the machine. There is usually an oscillating endwise motion of the cutting drum to prevent any scratching of the surface of the rubber by imperfections in the sand cutting face. With such a machine only the most ordinary buffing can be done and frequent accidents occur by holes or depressions in the surface being cut due to dirt getting underneath, correspondingly raising the surface which being buffed down level leaves a depression at that point.

For buffing large work perfectly true, no tool has been found equal to the heavy metal framed sanding machines known as the Royal sanders, of which the illustrations show a general view and details of the cutting drums and method of covering. The first machine of this type was invented in 1877. Originally a single drum machine, it was successively followed by the double and triple drum modifications, because of the demand for better work than could be done by single or double drum machines. The latest, or three drum machine, was perfected in 1895, and is very heavy, built entirely of metal in ten widths to work from 30 inches to 102 inches. The three drums are intended to carry as many different grades of paper—coarse, me-

dium, and fine. Following them on the work comes a brush cylinder for removing the dust from the finished surface, and also serving to keep the lower feed roll clean so as not to mar the finish.

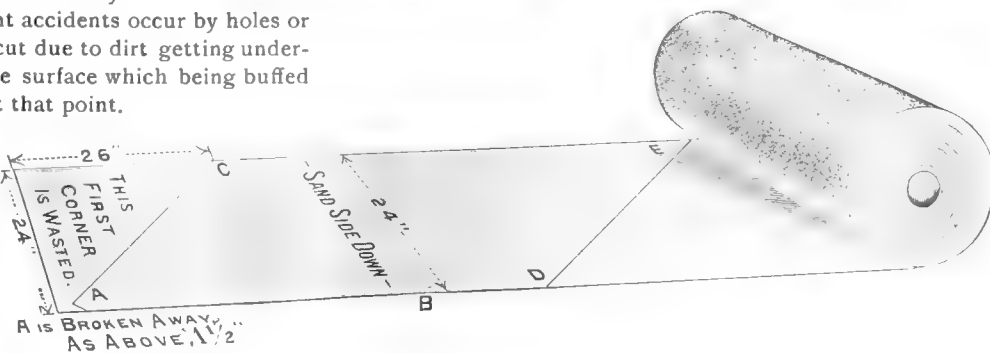
The paper can be easily and quickly applied to each drum, and in case of accident they can be conveniently removed from the machine without dismantling it. The details of the drums and the method of applying the sand paper covering spirally is shown in the illustrations. It will be noted that there is no opening for dust to enter and cause the drums to get out of balance. By thus arranging the sand paper spirally the drum is made continuous cutting. On all widths of machines the same width of sand paper is used, thus effecting a large percentage in the cost of this item. Each drum has an oscillating endwise motion for the purpose of removing any scratches which imperfections in the sand paper would otherwise leave.

Above the drums are adjustable idle pressure rolls for regulating the amount of cut desired, or by means of hand wheels at the feeding in end of the machine the drums may be raised simultaneously at each end, accomplishing the same result. Four large feed rolls above and four below the bed serve to give a steady and uniform feed to the stock passing through. There is an adjustment for each roll and platen or bed plate, and a method of locking it securely so that a proper alignment, once secured, may be maintained. The upper frame, carrying the top feed and pressure rolls, is regulated for different thicknesses of stock by means of a hand wheel or by power controlled by a lever convenient to the operator.

With such a machine it is possible to produce the most perfect and highly finished surfaces and to regulate the buffing to a nicety as regards accuracy of thickness and the true parallelism of surfaces.



DRUM OF "ROYAL" SANDER.



COVER OF SANDPAPER.

THE directors of the Amazon Steam Navigation Co., Limited, at the thirty-second annual meeting of the shareholders, in London, on June 29, recommended the payment of a final dividend 3 per cent. (7s. 6d. per share), in respect of the second half of the year 1903, making 5 per cent. for the year. This shows an improvement, the dividend for the preceding year having been 4 per cent.

RUBBER CULTURAL PROSPECTS IN MEXICO.

By George Cullen Pearson.

TO THE EDITOR OF THE INDIA RUBBER WORLD—*Dear Sir:* Some remarks of mine on rubber cultivation in Mexico, which lately appeared in a contemporary and have been somewhat widely copied, have brought me many letters of inquiry which perhaps can best be answered through the medium of your widely circulated Journal. I may add that it is six years since I commenced planting rubber in Mexico on an extensive scale as a private enterprise. My views are limited by my practical experience; beyond that I have no theories.

Rubber culture in Mexico is so recent an experiment in planting enterprise that as yet opportunities have been afforded to few to investigate thoroughly the many important questions connected with it. As with many another new industrial departure, magnified notions as to large returns to be secured in a brief period on a minimum expenditure have got abroad, fostered by wild tales having their foundation in ignorance or enthusiasm. This is all the more regrettable, as many of the statements now proven to be exaggerated have been put forward by men occupying distinguished positions in botanical science. The names of these men leave no doubt that their statements have been made in all good faith, but it is none the less to be deplored that they should have been given to the world before experience could prove their truth or falsity, as thereby loss and disappointment have been caused to many and opportunity has been afforded to unscrupulous promoters to induce investment by baiting their prospectuses with imaginative results given under names which carry so much authoritative weight.

Happily, rubber culture has no need of false encouragement based on exaggerated estimates as to results. The actual facts as proven by those who have expended much time, care, and capital in developing this new industry warrant a firm belief in its sure and lasting success.

In answer to inquiries as to Mexico being the best part of the American continent for the full development of rubber production, I can answer in the affirmative, with these reservations: In this vast country there is great diversity of climatic conditions; in the tropical region (*tierras calientes*) there are large areas totally unfit for agriculture of any kind, so that too great care cannot be exercised in the selection of land, especially for rubber culture. Fine land and favorable conditions can be secured if the necessary time and attention be given to finding them, but outside such selection the natural advantages are greater in more southern states such as Venezuela, Guatemala, Honduras, and Colombia, where there are larger areas of rich land and the rainfall is more abundant.

Given, however, the right land and district, the advantages are on the side of Mexico. The climate is equable and singularly free from the storms and cyclonic disturbances which desolate so many tropical lands and bring ruin to the planter, and is perfectly healthful if ordinary precautions be taken. In striking contrast to the unstable political conditions existing in the other countries named, Mexico possesses a firm, stable, and respected government which encourages every plan for the development of its vast resources, and is a country, which, by the aid of the increasing amount of foreign capital thus attracted, is advancing with rapid strides on a sure path of prosperity. Communication is being established by railroad construction between all principal points. Throughout the republic life and

property are as safe as in any part of the United States, whilst the law against evil doers is rigorously applied.

What is the cost of planting rubber is a question much more easily asked than answered. Let me warn the prospective planter against believing that the mere cost of setting out his plants, plus a few small items of expenditure such as figure in too many reports—even consular—will make up the sum total of his outlay until his trees shall yield of their abundance. Much depends upon the season, much upon the locality of his plantation, easy or difficult means of communication, possibilities of obtaining supplies, availability of labor, and the hundred and one requirements which can only be learned by hard experience.

Something may be learned as to the fallibility of estimates from a publication now before me, ostensibly issued as a guide to rubber planting, where I find the whole cost of acquiring, planting, and maintaining for six years, 100 acres of rubber planted land, put down at \$5390 Mexican, the Mexican dollar being calculated as worth 50 cents gold. I have no hesitation in condemning this as almost criminally misleading.

Let us examine one or two items of the estimates.

It is stated that two cleanings of the rubber a year for five years will be necessary, and the total cost of these ten cleanings is put down at \$1000 Mexican, for 100 acres.

Now, two cleanings a year are not, in my experience, sufficient, if the plantation is to be kept in the condition most beneficial to the growth of the rubber plants. There must be at least three cleanings a year, as the growth of weeds in fertile tropic soil can scarcely be believed without actual experience of it. I suppose that by unremitting attention to all details affecting the management of my own property, I do not err on the side of extravagant expenditure, yet I find that I cannot get 500 acres cleared under a cost of \$5000 at the present price of labor, and I have every advantage of locality and communication.

There should be three cleanings a year during the first three years, making nine cleanings; the next two years there should be two cleanings a year, making four cleanings; the sixth year one cleaning will suffice, making in all fourteen cleanings. I will, for the sake of argument, put these cleanings at \$750 each, and even at that low figure the cost of cleaning alone of the one hundred acres will amount in the six years to \$10,500, or double the sum laid down as the total amount required for six years' expenditure, including purchase of land.

Another item.—The living expenses of the planter for the entire six years are put down at a lump sum of \$1440 Mexican, or \$240 a year. It is to be hoped that he is calculated as a bachelor. Now I pay my lowest *peon* \$1 Mexican a day, and he is always in debt, though I suppose the Mexican agricultural laborer lives as cheaply and as miserably as any human being; perhaps the Chinese coolie beats him in economy, without the misery. I have still to learn how a decent white man can keep up his establishment on two-thirds of the amount expended by the Mexican *peon*.

While thus showing that estimates of cost should be accepted with great caution, I am not prepared, for reasons I have already stated, to give hard and fast figures as to the expenditure necessary. Rubber culture is not an enterprise for the small capitalist on any scale, making it worth his while to engage in it, while on even a moderate scale it should not be taken up unless the planter have considerable surplus funds at his command to enable

him to meet the many contingencies which are certain to arise after his calculations as to ordinary expenses have been most carefully made. I may state that my own expenditure in six years has been more than double what I calculated when I began, though my estimates were made on what was then considered a liberal scale.

Inquiries as to the yield of the rubber trees at maturity can be answered much more definitely. I am speaking of *Castilloa* rubber, that being the kind almost exclusively cultivated in Mexico, and the tree indigenous to the country. Taking the results obtained by myself from tests on a somewhat extended scale, and comparing them with those obtained by other workers in the same field, the following figures may be relied on as being the yield of well developed trees at the ages specified:

AGE OF TREE.	Yield of Latex.	Dry Rubber.
6 years	30 ounces.	12 ounces.
7 years.....	38 ounces	15.20 ounces.
8 years.....	48 ounces	19.20 ounces.
10 years.....	80 ounces	32 ounces.

—the yield increasing proportionately up to a certain age of the tree, probably thirty to fifty years. The yield of dry rubber here indicated is based upon the latex yielding 40 per cent. of rubber. I have in a great number of experiments only once found the yield as low as 39 per cent., and regard 40 per cent. as a conservative estimate.

As to the age at which a rubber tree should be first tapped one must be entirely guided by its development. In this there is a great diversity, some trees maturing much more rapidly than others, though all are growing apparently under precisely similar conditions. I have obtained marketable results, though only on an experimental scale, from four year old trees, the rubber being of excellent quality, while the trees have not suffered in any way from the tapping. I believe if a tree be well developed it can be tapped safely at the end of the sixth year, but I should recommend that ordinarily tapping should not take place until the expiration of the seventh year. I am convinced, as another planter has remarked, that the size of a tree has much more to do with the amount of rubber it will produce than its age. Also that the yield of the *Castilloa* depends more on soil and climate than has hitherto been recognized.

Two important considerations for the planter yet remain unsettled—namely, in what season and by what mechanical means the tapping of the *Castilloa* can be best undertaken. The rough and ready methods of the native collector can only be accepted when, as with him, the sole desire is to obtain at a season when he can best make his way through the forest the largest amount of rubber, with utter disregard to the future life of the tree. It is this wholesale destruction by native collectors of rubber bearing trees in all countries where they are found which has concentrated attention of rubber cultivation. The present barbarous method of collecting is universally condemned by planters, while there is divided opinion as to the most suitable season for tapping. These points are requiring earnest study for their solution. Proof leaves me no doubt that the *Castilloa* can be tapped twice a year without suffering any harm, provided sufficient time be allowed to lapse between the two operations to enable the tree to recover its strength. I do not believe that the yield will be thereby doubled, but the result will be a material increase of production.

Fortunately the *Castilloa* is not a tree which succumbs readily to injuries. Once it is safely through the caprices of the first year, and well rooted in suitable soil, it is indeed hard to destroy; while it appears to be subject to none of the insect visitations or fungoid growths affecting so many other trees under cultivation.

So far as regards the preparation of the rubber I would say,

so long as all impurities are eliminated, follow nature methods as much as possible. A long series of elaborate experiments have convinced me that artificial means of coagulation, as by the aid of chemicals, and infusions of native plants such as *Ipomoea bona nox* or "bejuco de necta," while bringing about speedy coagulation, have most pernicious after effects on the rubber, which show themselves within a short time, and greatly reduce its market value. It is vastly to the interest of all concerned in the production of Mexican rubber that its quality should be kept up to the standard to which it is capable of being raised.

Castilloa rubber properly prepared comes next in value to Pará, and there is no likelihood in view of the increasing demand that for many years to come sufficient supplies will be forthcoming to bring it down below 90 cents gold per pound, a figure at which some recent samples of mine have been valued in the London market. Very faithfully yours,

GEO. CULLEN PEARSON.

A REPORT ON GUTTA-PERCHA VALUES.

THE *Bulletin* of the Imperial Institute (London), of March 31, contains a report on samples of Gutta-percha forwarded to that institution from Penang, for chemical examination, with a view to determining their commercial value. These samples are stated to have been prepared under competent supervision, without any admixture of foreign matters whatever.

Mention here will be made first of the product known to the natives as "Gutta taban merah," from the forest tree *Palaquium gutta* (also known as *Dichopsis gutta*), which represents the highest type of Gutta-percha. The experts to whom this sample was referred gave its market value as 6 shillings [=£1.46] per pound, subject to fluctuations, which may be regarded as the highest market value of Gutta percha at present. The greater part of the gutta now marketed, however, brings very much less, not only on account of the adulterations practiced, but because of the scarcity of the particular species of *Palaquium* yielding it.

Another sample was of the material known in the Malay states as "Gutta taban putih," presumably from *Palaquium pustulatum*. This sample, showing in analysis a much greater percentage of resin, was valued commercially at 2 shillings [=48.7 cents] per pound. The Institute was asked as to the advisability of forming extensive plantations of this species with a view to extracting gutta from the leaves at an earlier age than it would be possible to obtain it from the trees. The reply was that, in view of the yield probably being no larger than from *Palaquium gutta*, and the product being worth only one-third as much, preference should be given to planting the latter.

The tenor of the Institute's report, by the way, is hardly favorable to the proposition to extract Gutta-percha from leaves. "Several of the extraction processes," it says, "have been tried upon a commercial scale in Europe [whither the leaves were, imported from Singapore], but for various reasons the results have been very unsatisfactory from a financial point of view, and it is believed that at the present time all the factories established in Europe have practically suspended operations." It is understood that several processes are at present undergoing practical trials in the East, but it is suggested that their results should be further studied before plantations are planned on a large scale in connection with any of the processes.

Still another sample—"Gutta simpor," from *Palaquium Maingayi*—was appraised at 1s. 6d. [=36.5 cents] per pound.

THE PRICE AND QUALITY OF RUBBER.

FROM "THE ELECTRICAL REVIEW" (LONDON).

IT has been said that general ignorance obtains on the important subject of rubber in its relation to the electrical industry. The probability is that the comment is scarcely unwarranted. Recollections of recent law cases bring back the memory of how expert witness after expert witness hurriedly disclaimed any desire to pose as the possessor of a knowledge of rubber. In one case especially, where the whole point at issue lay in the quality of the rubber used in the insulation, every other point was argued but the main one, bringing about a somewhat ludicrous state of affairs. If this lack of knowledge obtains in this branch of the industry, how much greater must it be in the others. It would be amusing were it not so serious, to hear the frequent stipulations as regards the use of the best Para in insulation, when the price quoted must necessarily forbid its use entirely, or only in a very attenuated form. The price of Para rubber has for some time been well over 4s. 9d. per lb. in its crude state, and on an average 15 per cent. of the crude rubber is lost before it finishes its course through the washing and drying processes. It may be taken, therefore, that the material ready for manufacture costs at least 5s. 6d. per lb. It is fairly easy for any reader to calculate the weight of the insulation, and the price he paid for the rubber in it, apart from anything else. On the basis of the prices which too generally obtain nowadays, the investigator will be forced to the conclusion either that the manufacturer is a philanthropist, or that the insulation is "very much mixed" rubber.

Dismissing the first hypothesis (with regret), the investigator is now face to face with the position into which his, and others', keenness in buying has forced the manufacturer. Let us make our views quite clear. There is as good insulated wire manufactured now as ever there was, but, unfortunately, much of the stuff bought nowadays does not merit this description. The manufacturer has been forced by his customers into making an insulation which would have been scorned years ago. It is true his more perfect knowledge has enabled him to use his materials to better advantage, but the process of cheapening must have an end somewhere and at some time, and it is time everyone in the electrical industry realized it; manufacturers are only to be blamed in so far that they have given way to a demand for an article at a certain price. The demand has been made by those who should be in a position to know the circumstances of the case, and to judge of what is necessary. We incline to the opinion that a more adequate knowledge of rubber and the price of it would, in a large measure, bring about a better state of affairs. It is for the credit of the industry that the work it does should at all times be work well done. How is it possible to accomplish this, when the very material that is relied upon for protection is attenuated to such an extreme degree as to scarcely hold together, far less give protection?

This may appear an exaggerated view, yet it is apparent at times at the present moment, and is the inevitable goal to which we are speeding. Rubber insulation is, and always should be a non-conductor of electricity, able to withstand the ravages of time, and the more or less accidental attacks of the elements. Good rubber insulation can do all these things better than any other practical material. Inferior rubber insulation can only do these things in the ratio of its inferiority. However skilfully chosen and skilfully prepared are the other ingredients of a rubber-cum-something-else insulation, it must always be remembered that none of these can supplant rubber in its properties, and most of them tend to its earlier disinte-

gration and the consequent loss of its properties. It lies with the electrical industry to say how much further the cheapening process on certain classes of work is to be carried. It is its credit, and its credit alone, that is imperilled. It is nothing to the public that the contractor may have had the fixing of the price. The makers had the expert knowledge, and with them rested (in the opinion of the public) the right to say what quality of material should be used.

We know, of course, that so long as any man has the power (no matter whether he be the most ignorant on earth) to use the title of electrician, so long will there be those to whom the credit of the industry is as nothing. No appeals would touch such a man, except an appeal to his pocket. It is to the more responsible members of the industry that we put the question, whether it is not time to cry a halt to this process of dangerous cheapening?

THE "NEW METHOD" FOR WRINGER ROLLS.

BY A WRITER IN THE "GUMMI-ZEITUNG."

I WAS interested in reading the article in No. 12 of the *Gummi-Zeitung*,* and admired the ingenuity of American manufacturers. But, only the ingenuity, because the method itself has, in my opinion, nothing in it to be admired, and the poor consumers who have to use such rolls are to be pitied. However, I will not neglect to make experiments with the new method, as described, and satisfy myself by actual facts, but already I feel the occasion to make the following comments on this theme.

First of all, I cannot see what "materially cheapening" this method of manufacture possesses. The soft rubber of the roll covering is drawn on a tubing machine, slipped onto hollow mandrels and wrapped, tied, vulcanized, unwrapped, smoothed, and cut to proper length. Now the iron core of the roll is heated its whole length to a dull red and is thrust into the roll, withdrawn, cooled in water, and again inserted.

Rubber melted in this manner by heat has no exterior smooth surface; drops of water will adhere in places from whence they cannot be wiped away, because everything coming in contact with this half-burnt bad smelling mass sticks to it. The drops of water, therefore, would remain between the covering and the axle, and are certainly not conducive to a firm union.

The total time required in this method is at all events no less than that consumed in the manufacture of wringer rolls by the method now in general use and approved, or in the method which I will describe further on.

It is very doubtful whether a roll cover made by the new method would adhere firmly, and I believe that the majority of the practically experienced rubber technologists are on my side when I take the liberty to at least strongly doubt it. The hard rubber is used in the manufacture of roll covers for the purpose of making an "iron strong" attachment between the axle and the soft rubber covering of the roll, and those who have witnessed the extreme force used in squeezing the laundry through the wringer rolls, or have examined worn out rolls critically, must be convinced that only the strongest adhesion is just good enough. It often occurs that the hard rubber separates from the soft rubber, if—

1. The qualities do not uniformly vulcanize;
2. The hard rubber or the inner layer of the soft rubber, or both, were not entirely clean;

* "Attaching Wringer Rolls by Melting," translated from THE INDIA RUBBER WORLD, November 1, 1903 - page 48.

3. Between the one and the other a solution lacking the necessary toughness is used or one which did not properly vulcanize.

A too small quantity of hard rubber will often be reduced to powder, or break into fragments after the machine has been used a comparatively short time only. How can it be possible that melted rubber after cooling adheres so tightly to the iron as is necessary in wringer rolls? Here the word "warehouse quality" occurs to me.

No matter how exactly cylindrical a roll cover has been ground, if it is attached according to the "new method" it is very questionable if it remains exactly cylindrical. I imagine that its surface will become wavy longitudinally. And how about the length of the so forced on stocks? Does such an expert workman exist who can cut a roll cover so exact as to have, after attachment, the same length as the axle? In most instances it will be either too long or too short. Also in regard to the perfectness of the outer diameter these roll covers will lack much that is desired. Of course for use it does not matter much whether the diameter of a roll is a little larger or smaller, but what does the dealer say if the diameter is not uniform?

A really cheap method to cover wringer rolls would be the following: The roughened axle is painted with a solution of hard rubber and after this is well dried a sheet of hard rubber compound, possessing the exact required strength, is placed around it. The seam is pressed together, not overlapping the ends. On the tubing machine a tube of soft rubber is then drawn, having a slightly smaller inner diameter than the outer diameter of the hard rubber covered axle. One end of the tube, which is a trifle longer than the length of the roll wanted, is cut off, warmed a little, and pushed over the hard rubber. This warming is not absolutely necessary. Then, with a board the tube is rolled from the center towards the ends several times, firming it, and cut off to proper length, both ends supplied with a disk, wrapped up and vulcanized. After vulcanization the roll is ground, cut off to proper length, and the ends of the axle are cleaned.

In the German market many inferior qualities of this article can already be found, and it is therefore very undesirable that additional factory methods of questionable character should be admitted. At all events manufacturers will always be thankful for any hints on really cheaper factory methods of merit.

A. W. H.

WOMAN'S RAINY-DAY APPAREL.

RAINY days no longer hurt the vanity of women. The evolution of the waterproof coat from a hideous garment to a beautiful one has been accomplished. It was only a few years ago that women were forced, through a stupid idea of what should constitute rainy weather apparel, to abandon all thought of a smart appearance when they went forth on a stormy day. Beauty and comfort are now so carefully considered in every item of the rainy-day wardrobe that a woman should appear at her best from hat to shoes and be delightfully comfortable when the rain clouds spread overhead.

Cravenette cloth, in heavy and light weights, is the unrivalled material for rain coats. It is impervious to dampness, soft, and pleasant to touch, hangs in good lines, and comes in the greatest variety of colors, shades, and fancy mixed weaves.

The cravenette coats come in full or three-quarters length. The full length is the more generally serviceable and becoming, as it covers a gown completely and emphasizes slenderness of form. The backs of these coats are box shaped, full or fitted. The fronts hang straight. Loose belts girdle most of the mod-

els. Sleeves have an easy fulness and are decidedly puffed over cuffs that appear in all possible variations of the fundamental narrow, loose cuff.

Many of the coats have slit openings in the front near the button lines for the hands to slip through. The double-breasted finish predominates, and among the most fetching buttons are those of cravenette trimmed with steel or brass. The pockets have buttoned-over flaps.

The collars are, as a rule, small, flat velvet turn-overs. Short capes, single, double or triple, form the shoulder finish of the majority of the coats, the triple capes leading in popularity.

No fixed rule governs the matter of linings. A coat may be lined throughout with silk or satin, or have lining in the sleeves only, or in the sleeves and body of the coat as far as the waist. They are substitutes for silk lining, these partially lined coats.

One finds extremes of simplicity and elegance in cravenette coats. Side by side with a dark gray of severest finish hangs a light red, long coat, satin-lined throughout, with triple cape turn-over collar of white cloth braided in red, and cravenette buttons trimmed with steel, that is quite as much intended for rain as the quiet gray model.

The cravenette coat serves the double duty of rain coat and fair weather ulster. This cannot be said of the silk rubber and satin rubber coats, for they are strictly waterproofs with their imperceptible inside finish of rubber. Though not generally useful they are extremely popular as waterproofs and are charmingly dainty and pretty.

A silvery gray silk model has a triple cape piped with white satin, white satin cuffs and high flaring collar. Another gray silk is belted with a pointed girdle richly beaded in steel. One of navy blue silk rubber has a red satin collar and cuffs and shiny brass buttons.

A box coat of creamy white satin-rubber is trimmed with a scarlet velvet collar and brass buttons. "When is such a coat worn?" "Yachting," comes the answer from distracted saleswomen who have to answer many such questions concerning these delightfully audacious coats, which come in plain and quiet styles as well as in those of a more showy order.

Cravenette leads among materials adaptable for short-skirted suits; but English cheviot, Scotch cheviot, all the materials used in men's walking suits, give a bewildering opportunity for choice to the woman who wishes her walking suit to be one to brave the elements. The weave of the cloth should be close and tight, the surface smooth rather than rough.

The skirt of a rainy-day suit should be shorter than that of the ordinary pedestrian costume, for the so-called short skirt of the season's walking suit touches the ground at the back at every step. "Five inches from the ground is the only actually rational rain skirt," says one of New York's most fashionable tailors, but, of course, there are women who will not wear so radical a departure from the conventional skirt and three inches from the ground is the compromise length. A leather binding is favored by English tailors for the rain skirt, but it is hardly necessary as a rule when the costume is made of strictly rain-proof cloth.—*New York Sun*.

THE factory director of the Gummi- und Kabelwerke Josef Reithoffer's Söhne (Vienna), Herr Josef Kunz, celebrated recently the fiftieth anniversary of his connection with the firm, which dates from 1832. On this occasion a representative of the chamber of commerce decorated him with a gold cross of merit. At the same time two foremen and three female employes, each of whom had been with the concern for 25 years or more, were decorated with the bronze medal of the trade union.

NEWS OF THE AMERICAN RUBBER TRADE.

NEW RUBBER RECLAIMING COMPANY AT AKRON.

THE Alkali Rubber Co., of Akron, Ohio, with \$1,000,000 capital, has for its objects the control of the rubber reclaiming patent of Arthur Hudson Marks (No. 635,141—October 17, 1899), and the operation of a rubber reclaiming plant for supplying the trade. The company begins operations by acquiring the reclaiming plant which the Diamond Rubber Co. have maintained for the past four years for meeting their own requirements. The officers of the new company are: A. H. Marks, president; Bertram G. Work, vice president and treasurer; George G. Allen, secretary. The remaining directors are Colonel George T. Perkins and Ohio C. Barber. It will be noticed that the official board is composed of representatives of The Diamond Rubber Co. and The B. F. Goodrich Co. Report has it that the Diamond company is to receive from the Goodrich company a handsome payment for a half interest in the new corporation. The reclaiming plant hitherto operated by the Goodrich company is to be closed, the space occupied by it to be devoted to other purposes of the company. It is understood that the Diamond plant is to be enlarged at once. Frank Peabody has been superintendent of the plant since its inception. The Marks reclaiming process consists in treating ground rubber scrap with a dilute alkali solution at a comparatively high temperature, then washing, drying, and sheeting. The same patent is the basis of the rubber reclaiming work of the Northwestern Rubber Co., Limited (Liverpool), of which Mr. Marks is president and Mr. Barber a director.

MR. WARNER GOES TO MISHAWAKA.

MR. EMMETT A. SAUNDERS, manager of the rubber department of the Mishawaka Woolen Manufacturing Co. (Mishawaka, Indiana) since its establishment, became president upon the death of Martin V. Beiger, who formerly held that office. With his added duties Mr. Saunders found too much work on his hands, and the position of manager of the rubber department has been filled by the appointment of Mr. Adna D. Warner, who since 1899 has been general manager of the Beacon Falls Rubber Shoe Co., having been formerly for a number of years factory superintendent of the Goodyear's Metallic Rubber Shoe Co., at Naugatuck.

VICTOR RUBBER CO.—SALE OF PLANT.

AT the first meeting of creditors of the Victor Rubber Co. in bankruptcy [See THE INDIA RUBBER WORLD, June 1, 1904—page 320], at Springfield, Ohio, on June 3. George S. Dial was chosen as trustee. On June 14 Trustee Dial offered at public sale the property of the company at Snyderville (near Springfield), for which the highest bidder was Daniel Snyder, at \$23,550. The company did not own the real estate occupied by their factory. It is understood at Springfield that Mr. Snyder intends to reorganize the company, with a view to putting the factory in operation again.

THE NEPONSET RUBBER CO.

AMENDED articles of incorporation have been filed with the secretary of state of New Jersey, changing the name of the Old Colony Rubber [mentioned in the last INDIA RUBBER WORLD—page 321] to the Neponset Rubber Co., the authorized capital remaining at \$125,000, and the registered office in New Jersey at No. 243 Washington street, Jersey City. The new company will engage in the manufacture of mechanical rubber goods, at Hyde Park, Massachusetts, having acquired the plant

operated by the Boston Gossamer Rubber Co., which has been idle since the retirement from business of the latter company about a year ago. J. C. Spillan and Thomas B. Pervis, Jr., both of Boston, are mentioned as the prime movers in the new enterprise.

HARTFORD RUBBER WORKS CO.—ELECTION.

AT a special meeting of the shareholders of the Hartford Rubber Works Co., one of the constituent companies of the Rubber Goods Manufacturing Co., at Hartford, Connecticut, on June 7, James W. Gilson was elected a director to succeed Lewis D. Parker. At a meeting of the directors held immediately afterward, the following officers were elected:

President—CHARLES H. DALE.
First Vice President and General Manager—WILLIAM SEWARD, JR.
Second Vice President—CHARLES A. HUNTER.
Third Vice President—JUSTUS D. ANDERSON
Secretary, Treasurer, and General Agent—JAMES W. GILSON.
Assistant Secretary and Treasurer—HENRY FLOW.
General Factory Manager—J. E. TOURTELLOTTE.
General Superintendent—H. W. BIGELOW.
General Purchasing Agent—W. H. WHALEN.

The board of directors comprises the first six names on the above list, with the addition of Ernest Hopkinson. Mr. Gilson, who had been sales manager of the company, in June, 1903, was elected secretary, to which office is now added that of treasurer.

MILFORD RUBBER CO.—INCREASE OF CAPITAL.

THE Milford Rubber Co. (Milford, Massachusetts), proofers of cloth for the trade, have increased their capital from \$10,000 to \$40,000, fully paid, the new shares being held by Leon Aronson, president; Harris B. Gordon, treasurer; and Joseph Aronson, a director. The company began business in Milford about six years ago on a small scale; in May, 1899, they were incorporated, with \$10,000 capital; and in the return made to the state commissioner of corporations in March last their assets figured at \$59,000. The company inform THE INDIA RUBBER WORLD: "Our reason for increasing our capital stock is, that it is the intention of the directors to have a calender put in our factory at Milford, and manufacture a general line of mechanical rubber goods."

A. W. FABER RUBBER WORKS.

THE firm of A. W. Faber (New York), pencil manufacturers, who recently acquired the plant and business of The Paramount Rubber Co. (Newark, New Jersey), are now operating the same in their own name, in the manufacture of their requirements in erasers, rubber bands, and the like. The rubber goods sold by this firm in Europe are made at their Newark factory.

AN INDIANAPOLIS RUBBER STORE.

THE only wholesale house in Indianapolis devoted exclusively to rubber goods is that of the Central Rubber and Supply Co., established and incorporated in 1894, since which time the business has grown steadily. Their premises, No. 229 South Meridian street, comprise four floors, 25×100 feet, all the space in which is utilized for the storage or display of mechanical rubber goods, carriage tires made for the company, waterproof clothing, and rubber specialties, together with a general line of mill supplies. The company's trade covers Indiana, Illinois, and eastern Ohio, and gives employment to five traveling salesmen. The mechanical goods line carried is that of the New York Belting and Packing Co., Limited. Almus G. Ruddell is

president of the company, and Arthur C. Moore secretary and treasurer.

NEW ENGLAND RUBBER CLUB.

THE executive committee of this club have arranged for the Annual Summer Outing, to take place at Clyde Park, Brookline, Massachusetts, on Tuesday, July 26, which has been made available by the courtesy of the Country Club. Details will be mailed to the members in due time, and a full attendance is desired for what the committees in charge hope to make a very pleasant occasion.==A new edition of the club's constitution and membership list, dated June, 1904, contains 183 names.

AKRON DENTAL RUBBER CO. BUY A PLANT.

THE Akron Dental Rubber Co., the incorporation of which has been mentioned lately in these pages, have purchased the buildings occupied formerly by the People's Hard Rubber Co., at Akron, together with some rubber machinery remaining on the premises, and expect to begin making goods by the end of the present month. The purchase was made from the American Hard Rubber Co., the price being reported at \$65,000. The new company will manufacture a "quick curing" dental rubber under the processes of Arthur C. Squires, together with a new seamless dress shield, and a golf ball patented by Mr. Squires.==On June 15 the company filed with the secretary of state of Ohio a certificate of increase of capital from \$25,000 to \$100,000.

RUBBER FACTORY IN CANADA FOR SALE.

THE rubber shoe factory of The Boston Rubber Co. of Montreal, Limited, is offered for sale. The company ceased operations about two years ago, after a legal decision restraining them from the further use of their "Boston" trademark, and which practically forbade them to continue without a change of their corporate title. The stock of goods on hand was disposed of, but the directors never reached an agreement whether to reorganize the company or go into liquidation. In March last it was decided, by the directors and the principal creditors, to have a liquidator appointed, in order to facilitate operations, either for the disposal of the plant or to form a new organization to carry on the business. On May 5 the court appointed as liquidator James McGoun, the secretary-treasurer of the company, who on another page of this paper advertises the plant for sale. It is understood that the property and machinery have been kept in first class condition, in readiness for operation, but the principal shareholders, not being directly connected with the rubber trade, desire to withdraw from the enterprise, provided new arrangements can be made for taking over the assets.

THE NEW RUBBER COMPANY AT BLOOMFIELD.

WILLARD P. CLARK, trustee in the matter of The Combination Rubber and Belting Co., bankrupt, on June 17 offered for sale at public auction the property of the company at Bloomfield, New Jersey, which was purchased as one item by a lawyer in the interest of a new company incorporated to continue the operation of the factory—the Combination Rubber Manufacturing Co., incorporated in New Jersey with \$150,000 capital authorized. The officers of the new company are:

President and General Manager—EDWARD H. GARCIN.

Vice President—C. A. MOORE.

Treasurer—HARRY L. HEPBURN.

Secretary—ALFRED H. HOWE.

The property included in this sale consists of more than four acres of land; the original mill buildings of The Combination Roll and Rubber Co., and the machinery in the same; a new brick building 60×150 feet, five stories high, equipped with machinery for which \$65,000 was paid not long since; together with tenements, water power, molds, patterns, etc. The mill

at Bloomfield, for the most part, has had a successful career, and the new company take charge of a going business. It is stated that during the late receivership sales were made aggregating \$108,000, the mill having been continuously in operation, though on a reduced scale. Mr. Garcin, the head of the new enterprise, is widely known in the mechanical rubber trade, with which he has been connected all his life, having devoted most of his time for 20 years past to the Trenton Rubber Manufacturing Co. Messrs. Moore and Hepburn, who are named above, are connected with the Western Electric Co., and Mr. Howe with the Waterbury Rubber Co. The factory superintendent, William C. Siberson, will continue in charge. The Combination Rubber Manufacturing Co. will have a New York office for the present at No. 149 Church street.

FAILURE IN THE CRUDE RUBBER TRADE.

ON June 8, Harry Graham Wright and William Finley Methuen, trading as William Wright & Co., brokers in crude India-rubber, 11, Oldhall street, Liverpool, made a deed of assignment to Dennistoun, Cross & Co., London. This course was rendered necessary by complications growing out of the management of the firm's branch in New York, which, for over two years, had been in charge of A. Heathcock. The firm were heavy creditors of The Victor Rubber Co. (Springfield, Ohio), whose failure was reported in this Journal last month, besides which Manager Heathcock is asserted to have indulged in speculation in rubber to a considerable extent, without the consent or knowledge of his principals. It is understood that the creditors of the New York house are bankers altogether, all purchases of rubber made from local houses having been for cash. The amount of liabilities is not known certainly, pending an examination of the books, but is believed in the trade to exceed \$200,000. Attachments have been secured against the assets in New York of Wright & Co., in favor of two banks affected, Müller, Schall & Co. claiming \$39,500 and König Brothers \$30,154. It appears that Heathcock's method was to obtain advances from the banks, based upon certain lots of rubber, which he failed to repay when the rubber was sold, but converted the funds collected from the firm's customers to making good the losses he had sustained in covering his "short" sales of rubber. Since the date of the assignment Heathcock's whereabouts have been unknown to the firm's creditors. There is no evidence of his having converted any of the firm's funds to his own use.==The house of William Wright & Co. have been established in Liverpool for more than 50 years, and the branch house in New York since 1897. The opinion seems to prevail in the trade that, under a reorganization, the Liverpool business will continue, but the future of the New York branch will depend upon the result of an examination of the late manager's accounts.

THE SCRAP RUBBER SITUATION.

OUR quotations for rubber scrap, in another column indicate a lower price level than has existed for years. The tendency has been downward since the beginning of the year, and of late decidedly so, though the impression seems to prevail that perhaps the decline has now reached its limit. The price situation is believed to be merely a reflection of the position of supply and demand. The past winter brought into use an exceptionally large amount of rubber footwear, and the collections of old rubbers this spring—under methods constantly better systematized—were likewise unusually large. At the same time the demand for reclaimed rubber in the mechanical goods branch is reported to be somewhat slack, although, on the whole, a large volume of business is being done. Hence, two factors in lowering the price of scrap rubber. Coincident with the decline of prices in this country has been a disinclina-

tion on the part of European shippers to sell, and very large stocks now exist at Hamburg and elsewhere, which ultimately must come on the market for whatever they will bring—a further element in keeping down prices. The following figures indicate the imports of rubber scrap at New York—the principal port of entry for such goods—for two years past, the decline shown being a very unusual circumstance, since usually each year's imports have been in excess of the preceding year:

	Pounds.		Pounds.
June, 1902.....	3,418,737	June, 1903.....	1,207,089
July.....	2,878,755	July.....	1,743,341
August.....	1,395,362	August.....	1,907,846
September.....	1,508,956	September.....	515,667
October.....	1,475,616	October.....	2,360,129
November.....	1,816,436	November.....	1,122,497
December.....	1,217,461	December.....	1,333,081
January, 1903....	1,233,155	January, 1904....	1,131,031
February.....	1,142,032	February.....	555,385
March.....	1,421,316	March.....	1,554,429
April.....	1,931,473	April.....	1,184,901
May.....	1,914,662	May.....	1,901,816
Total.....	21,353,961	Total.....	16,810,662

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED STATES RUBBER CO.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending May 21	2,870	16 ³ / ₄	15 ⁵ / ₈	3,730	68	65
Week ending May 27	787	16 ³ / ₄	16 ¹ / ₄	2,140	57 ³ / ₈	66 ¹ / ₈
Week ending Jun. 4	870	16 ¹ / ₈	15 ⁷ / ₈	520	66 ⁷ / ₈	65 ¹ / ₄
Week ending Jun. 11	2,080	16 ³ / ₄	15 ³ / ₄	960	66 ³ / ₈	66
Week ending Jun. 18	870	17	16 ¹ / ₄	440	66 ¹ / ₈	66
Week ending Jun. 25	50	16 ¹ / ₂	16 ¹ / ₂	300	66 ¹ / ₄	66

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending May 21	1,110	15 ¹ / ₄	15	100	77	77
Week ending May 27	10	14 ¹ / ₂	14 ¹ / ₂	100	77 ¹ / ₂	77 ¹ / ₂
Week ending Jun. 4	40	16 ¹ / ₂	15	300	77 ¹ / ₂	77 ¹ / ₂
Week ending Jun. 11	67	15	15	172	76	76
Week ending Jun. 18	100	15 ¹ / ₂	15 ¹ / ₂	...	...	...
Week ending Jun. 25	200	15 ¹ / ₂	15 ¹ / ₈	200	77 ¹ / ₂	77 ¹ / ₂

THE ALDEN RUBBER CO. (BARBERTON, OHIO.)

THE following circular has been issued to the trade, under date of June 13:

DEAR SIR: Owing to the fact that Mr. I. C. Alden has filed a petition in bankruptcy, a number of our customers and some of our creditors have been inquiring of us what effect this act upon his part would have upon the Alden Rubber Co.

We therefore respectfully advise that Mr. Alden has not for the past few months been connected with the actual management of The Alden Rubber Co. and this procedure will in no way affect the condition of the said company, nor in any way alter the plans of the management as now contemplated.

At the last annual meeting of The Alden Rubber Co., Mr. Alden retained the title of president of the company, but no duties whatever were attached to this office. The company is a creditor of Mr. Alden to the extent of approximately \$3000, but in no other way interested in the bankruptcy proceedings. Very truly yours,

THE ALDEN RUBBER CO.

The management of the company is in the hands of W. A. Johnston, of Akron, treasurer of the corporation. THE INDIA RUBBER WORLD is assured that the factory is now actively employed, and the business is as large as at any time in the past.—Mr. Isaac C. Alden, one of Akron's best known business men and president of the Alden Rubber Co., filed a peti-

tion in the United States bankruptcy court at Cleveland, Ohio, on June 8, asking to be declared a bankrupt. At a meeting of Mr. Alden's creditors at Akron, on June 25, Frank B. Burch was elected trustee. The liabilities are reported at \$238,126.30 and the assets \$108,113.92.

NEW INCORPORATIONS.

THE Alkali Rubber Co. (Akron, Ohio), May 19, 1904, under Ohio laws, to reclaim rubber; authorized capital, \$1,000,000. Incorporators: George G. Allen, Frank H. Waters, Joseph W. Hofbeil, Harry Williams, Clara L. Smith. Further details are given on another page of this issue.

=Watkinson Rubber Shoe Co., June 15, 1904, under New Jersey laws, to manufacture rubber boots and shoes; authorized capital, \$50,000. Incorporators: George Watkinson, Irving Watkinson, Edwin Robert Walker—all of North Clinton avenue and Mulberry street, Trenton, New Jersey, which is the location of the factory of the Empire Rubber Manufacturing Co. The new company will begin manufacturing in part of the Empire company's plant, to which additions are building for the accommodation of the Watkinson interests.

=Combination Rubber Manufacturing Co., June 14, 1904, under New Jersey laws; authorized capital, \$150,000. Incorporators: Edward H. Garcin and Harry L. Hepburn, Bloomfield, New Jersey; Alfred H. Howe, Jersey City. Organized to succeed the Combination Rubber and Belting Co. (Bloomfield).

=Rose Rubber Co., May 25, 1904, under Maine laws, to make and deal in rubber specialties; capital, \$75,000, in \$1 shares, nothing paid in. Directors: George E. Warren, Waltham, Mass.; William H. Mitchell, Melrose, Mass.; L. E. Reed, Belmont, Mass.; Horace Mitchell (president), Kittery, Maine; A. M. Meloon (treasurer), Newcastle, N. H.

=The J. Samuels Co., April 24, 1904, under Connecticut laws, to deal in boots and shoes and rubbers; capital, \$40,000. Directors: Joel Samuels, president and treasurer; Minnie Samuels, vice president; Joseph Krotoshine, secretary; Samuel E. Samuels, and Louis Samuels. Principal office and store, No. 866 Main street, Hartford, Conn. Branches: No. 23 Colony street, Meriden, Conn.; No. 364 Main street, Springfield, Mass. The company succeeds to an established business under the same name. They carry the Wales-Goodyear line of rubbers.

=The Beacon Falls Rubber Shoe Co. of Boston, June 27, 1904, under Massachusetts laws; capital, \$50,000. To have charge of the business in Massachusetts of the Beacon Falls Rubber Shoe Co. (Beacon Falls, Conn.), manufacturers of rubber footwear. Tracy S. Lewis, president and treasurer.

TRADE NEWS NOTES.

THE New York Belting and Packing Co., Limited (New York), announce that in arranging their new offices and show-rooms, at Nos. 91-93 Chambers street, they have specially fitted up a room, equipping it with facilities for correspondence, telephone service, etc., for the convenience of their friends, who are cordially invited to make this their headquarters when visiting the city.

=The Safety Insulated Wire and Cable Co. (New York) have received orders recently from agents of the Japanese government for a large quantity of rubber insulated wire; from the artillery corps of the United States army for a lot of torpedo cable; and from the Commercial Cable Co. for a land cable to connect Coney Island with No. 20 Broad street, New York.

=The annual meeting of shareholders of the Consolidated Rubber Tire Co. was held at the registered offices of the company, in Jersey City, New Jersey, on June 2, at which time the board of directors was reelected. The directors then reelected the officers previously in position.

=The city of Chicago has recently purchased about 25,000 feet of fire hose for the use of the fire department. The contract for couplings for the same was awarded to The W. D. Allen Manufacturing Co., of that city. This firm have sold all the couplings used in the Chicago fire department for the last 25 years, which speaks pretty well for the Allen couplings.

=The Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, have been licensed to manufacture and sell in Canada the Fisk detachable tires, the manufacture of which in the States is carried on by the Fisk Rubber Co.

=The Beacon Falls Rubber Shoe Co. (Beacon Falls, Connecticut) made no change in their selling prices to the trade on June 1.

=The Western Rubber Co. (Goshen, Indiana), after making careful tests and looking into its merits, have entered into a contract for the manufacture of the B OK tire, for motor cars, motor bicycles, and driving wagons. This is a patented tire of circular section, with a core of sponge rubber, marketed by The B-OK Tire Co., of Goshen and No. 1312 Madison avenue, Chicago.

=Work was resumed on June 6 at the rubber shoe factory of L. Candee & Co. (New Haven, Connecticut), after a shutdown which began on March 31. During this period important additions and improvements were made, some account of which was given in the last INDIA RUBBER WORLD.

=The rubber factories at Naugatuck, Connecticut, will be closed at 4 P. M. on Saturdays during the summer months, work being started an hour earlier in the morning. This plan was adopted last summer and gave general satisfaction to the employés.

=The National India Rubber Co. (Bristol, Rhode Island) are erecting a new cement building, 21x40 feet, inside measurement, of brick, with iron roof.

=The Beacon Falls Rubber Shoe Co. (Beacon Falls, Connecticut) are having plans prepared for a row of improved tenements on the west side of Naugatuck river, for the use of their employés.

=The Boston Belting Co.'s dividend No. 139, the regular quarterly dividend of \$2 per share, is payable July 1 to shareholders of record on June 18.

=The Goshen Rubber Works (Goshen, Indiana), having acquired a plant operated for several years past by N. Brown, have installed, in connection with their other business, an up to date machine shop. They are now prepared not only to take care of their own requirements in the way of making molds and doing repair work, but to accept orders from the outside. Mr. Brown has been engaged to take charge of the shop.

=The copartnership between Louis J. Mutty and Allan P. Trask, under the name of The Mutty-Trask Co., rubber goods dealers, in Boston, has been dissolved. The business will be continued by Louis J. Mutty, under the name L. J. Mutty Co., at No. 276 Devonshire street.

=Frank C. Tuttle, proprietor of the "Goodyear Rubber Store," New Haven, Connecticut, has filed a petition in bankruptcy, with schedules showing liabilities \$8913.36, and assets \$4988. William S. Pardee has been appointed receiver.

=The Elliott Manufacturing Co. (Menlo Park, New Jersey), are reported very busy producing the new golf ball patented by their president, Charles B. Elliott, which is meeting a satisfactory sale.

=The Single Tube Automobile and Bicycle Tire Co. have filed suit in the United States circuit court in the district of Massachusetts, against the Equitable Distributing Co., of Boston, alleging infringement of the "Tillinghast" patent, No. 497,971, on single tube tires. The Continental Rubber Works

(Erie, Pennsylvania) announce that no suit thus far brought under this patent affects them.

=A judgment for \$26,960 was entered in the New York county clerk's office on June 14, against the American Pneumatic Horse Collar Co., on an attachment in favor of George E. Relyea, on notes made by the company in Detroit, Michigan, in 1903. The company is incorporated in New Jersey, with \$2,000,000 capital.

=The Woonsocket Rubber Co. announce that their two factories will be closed between August 5 and August 18.

=The organization of the Imperial Rubber Co., (Beach City, Ohio), mentioned in the last INDIA RUBBER WORLD, has been completed, with the election of Charles W. Stahl president and J. C. Keplinger secretary. This company is the result of combining the Canton Hard Rubber Co., late of Canton, Ohio, and the Tuscarora Rubber Co., of Beach City. The capital is \$100,000 and hard and soft rubber goods will be made.

=B. F. Sturtevant Co. announce the removal of their entire plant from Jamaica Plain to their new works at Hyde Park, Massachusetts. With nine acres of floor space and all the modern appliances, they will continue to manufacture the well-known Sturtevant products: Blowers, engines, motors, economizers, forges, steam heating, ventilating and drying apparatus, etc.

=The Naugatuck Chemical Co., incorporated in New Jersey, with \$100,000 capital, have purchased the Beach property of the United States Rubber Co. at Naugatuck, Connecticut, and will erect a plant on the premises.

=Mr. Webster Norris has been appointed superintendent of the factory of The Republic Rubber Co. (Youngstown, Ohio), to date from July 1.

=The Easthampton Rubber Thread Co. (Easthampton, Massachusetts) were the successful bidders for supplying 5000 pounds of rubber bands for the United States postoffice department and postal service, for the fiscal year 1904-05, under the recent advertisement of the department. The specifications call for 500 pounds No. 11; 1500 pounds No. 14; 1500 pounds No. 16; 500 pounds No. 19; 1000 pounds No. 31.

=The Portland (Maine) Retail Shoe and Leather Association, at a meeting on June 9, voted to maintain a scale of prices on rubber footwear based upon manufacturers' prices.

=In the matter of North American Rubber Co., bankrupts, a hearing to which the creditors were invited, before William H. Willis, referee in bankruptcy, at No. 115 Broadway, New York, on June 27, has been postponed to July 7, at 2 P. M.

=In the last issue of this Journal a suit of the Gutta Percha and Rubber Manufacturing Co. against the Peerless Rubber Manufacturing Co. for alleged infringement of patent, No. 543,583, on rubber floor tiling, was mentioned as having been "settled out of court". The defendants in the case advise THE INDIA RUBBER WORLD that there was no effort at settlement on their part; in fact, that there was no settlement made other than the answer of their attorneys, citing an early English patent which so clearly anticipated the patent above referred to, that the suit was withdrawn.

=An attachment for \$1,000,000 has been placed upon the property of John J. Banigan, Westerly, Rhode Island, on the suit of Charles A. Borland, a Boston lawyer, alleging breach of contract. The writ was sworn to before the chief justice of the United States Supreme Court. The suit is against Mr. Banigan as a member of the brokerage firm of Prindle, Weeden & Co., who did business formerly at Providence. One member of the firm was Leonard Imboden, some reference to whom appeared in THE INDIA RUBBER WORLD August 1, 1903 (page 395), under the heading "After a Rubber Man's Money?"

=The rubber store of Robert Josselyn, No. 24 School street, Boston—known as the "Goodyear Rubber House"—was damaged by fire on June 27, to the extent of \$5000.

=The regular quarterly dividend of 2 per cent. of the Hood Rubber Co. was payable June 13.

PERSONAL MENTION.

PRINCE PU LUN, the heir apparent to the Chinese throne, on his recent tour of the United States, as Chinese commissioner to the St. Louis exposition, visited the factory of the Indianapolis Rubber Co., the first rubber goods factory he had ever seen.

=The employés of the Boston Rubber Shoe Co., after the death of the Hon. Elisha S. Converse, raised about \$100 in each of the two factories, no contribution exceeding 10 cents, with the idea of buying flowers for the funeral. This idea was dropped, however, with a view to using the funds for the erection at each factory of a bronze memorial tablet commemorating the leading events of Mr. Converse's life.

=It having been generally reported that Mr. Charles R. Flint, of New York, had purchased two warships from Chile, the Chilean minister at Washington, on June 1, stated that the arrangements for the sale had been suspended because Mr. Flint's agent would not tell what country the ships were to be turned over to, and Chile was unwilling to violate her neutral-declaration by having them go to either Russia or Japan.

=Mr. H. D. Warren, president and treasurer of The Gutta Percha and Rubber Manufacturing Co. of Toronto, Limited, is at present in Europe, with his family.

=Joseph S. Stout, of the firm of Stout & Co., bankers and brokers of New York, died June 28, in his fifty-eighth year. He was connected with a number of important businesses and institutions, including the Hodgman Rubber Co. (New York), of which he was a director and the treasurer.

=Elliot Burris, who died at his home in Morristown, New Jersey, on May 27, in his fifty-sixth year, was at one time actively interested in the rubber tire trade, after which he managed the Humber bicycle plant at Westboro, Massachusetts. During his later years he was a stock broker, with offices in New York.

=Charles S. Mersick, president of the Merchants' National Bank of New Haven, Connecticut, who died on June 24, was also the head of the hardware firm of C. S. Mersick & Co., of the same city, with branches in other cities, and sole New England agents for The B. F. Goodrich Co., rubber manufacturers, of Akron, Ohio.

=It will be learned with regret that Mr. Thomas Rowland Western, cashier of the Manufacturers' Advertising Bureau, (New York), of which Benjamin R. Western, his father, is the proprietor, died suddenly on Sunday, May 22 after an illness of only a few days. Mr. Western was of a genial and accommodating disposition and will be missed by many friends.

=Rollin A. Edwards, manager of the rubber department of Haynes, Sparrell & Co., boot and shoe jobbers of Boston, died on June 4, in his fifty-fifth year.

AMERICAN CHICLE CO.

THE annual meeting of shareholders will be held at the company's registered office in New Jersey—No. 15 Exchange place, Jersey City—at 12 M., July 19. The company continue the payment of quarterly dividends of 1½ per cent. on the preferred shares and monthly dividends of 1 per cent. on the common shares.

SPORTS OF RUBBER WORKERS.

A LARGELY attended baseball game was played at Akron, Ohio, on June 11, between the teams of The B. F. Goodrich Co and Republic Rubber Co. factories, the latter from Youngstown. Ten innings were played, with a score of 2 to 1 in favor of the Goodrich nine. The Goodrich team played the Akron Retail Clerks team at Akron on June 14, winning by a score of 6 to 4.

The Goodyear (Gold Seal) baseball team of the Goodyear Rubber Co. (New York) defeated the team of the Goodyear's India Rubber Glove Manufacturing Co. at Greenville, New Jersey, on June 13; score, 18 to 11. The Goodyear (Gold Seal) team would like to arrange games with any rubber company's team within 25 miles of New York. Address A. J. Reisner, No. 787 Broadway, New York.

The annual picnic of the Goodyear Tire and Rubber Co.'s employés occurred at Akron on June 16.

REVIEW OF THE CRUDE RUBBER MARKET.

DURING the first part of the month just closed the market was inactive and all grades experienced a decline in price. More recently, however, the market has shown greater firmness, with a tendency to an advance in prices, so that in the case of Pará grades our quotations at this date are almost on a par with those published in our last issue.

Doubtless one element in the situation has been the near approach of stock taking season which, in so many rubber factories, occurs about July 1, and just prior to which many manufacturers buy as sparingly as possible. It appears, however, that not even the disinclination of buyers has been sufficient, in view of the small stocks in all markets, to induce holders to make liberal concessions to buyers. Toward the end of the month reports were received from Amazon markets of greater firmness and higher prices.

It now appears that the Pará crop here ended with an output of something less than 1000 tons in excess of last year's figures, and only a little more than the highest output of any year in the past. The figures which follow relate to all rubber arrivals at Pará, including Caucho:

FROM JULY 1, 1903—	1900-01.	1901-02.	1902-03.	1903-04.
To December 31.....tons	11,300	13,630	12,250	13,470
To May 31	26,300	28,750	28,090	29,080
To June 30.....	27,600	30,000	29,850	a 30,470

[a—To June 28, 1904.]

Receipts at Pará must now be comparatively small for two three months, at least.

The details of the latest Antwerp sale, given in another column, would suggest a declining market for Congo rubbers to a greater extent than, in the view of American experts, has been the case. That is to say, while many lots of lower grade rubbers offered at this sale sold materially lower than brokers' valuations, the rubbers were over valued, so that really good prices were paid. Some of the better grade lots sold for more than the valuation.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on June 30—the current date:

PARA.	July 1, '03.	June 1, '04.	June 30.
Islands, fine, new.....	88@89	109@110	108@109
Islands, fine, old.....	92@93	@	109@110
Upriver, fine, new.....	93@94	113@114	112@113
Upriver, fine, old.....	98@99	114@115	113@114
Islands, coarse, new.....	56@57	64@ 65	63@ 64

	July 1, '03.	June 1, '04.	June 30.
Islands, coarse, old.....	@	@	@
Upriver, coarse, new.....	72@73	88@ 89	87@ 88
Upriver, coarse, old.....	@	@	85@ 89
Caucho (Peruvian) sheet.....	56@57	70@ 71	66@ 67
Caucho (Peruvian) ball.....	70@71	80@ 81	76@ 77

The market for other sorts in New York, the reductions on which have been more marked, is as follows:

AFRICAN.		CENTRALS.	
Sierra Leone, 1st quality 93	@94	Esmeralda, sausage... 73	@74
Massai, red..... 93	@94	Guayaquil, strip..... 62	@63
Benguella.....	@	Nicaragua, scrap... 73	@74
Cameroon ball..... 63	@64	Panama, slab..... 56	@57
Accra flake..... 35	@36	Mexican, scrap..... 72	@73
Lopori ball, prime..... 93	@94	Mexican, slab..... 56	@57
Lopori strip, prime..... 89	@90	Mangabeira, sheet..... 49	@55
Ikelemba..... 94	@95	EAST INDIAN.	
Madagascar, pinky..... 82	@83	Assam..... 85	@86
		Borneo.....	@

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	6\$700	Upriver, fine.....	7\$800
Islands, coarse.....	3\$400	Upriver, coarse.....	5\$600
Exchange, 12d.			

Last Manáos advices:

Upriver, fine.....	7\$850	Upriver, coarse.....	5\$450
Exchange, 12½d.			

NEW YORK RUBBER PRICES FOR MAY (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine.....	1.11@1.15	91@94	71 @74½
Upriver, coarse.....	86@ 90	71@73	56 @60
Islands, fine.....	1.08@1.12	87@91	70 @73½
Islands, coarse.....	65@ 69	56@60	45 @49
Cametá, coarse.....	66@ 70	60@64	51½@53

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.		PARÁ.		ENGLAND.	
	Fine and Medium.	Coarse.	Total 1904.	Total 1903.	Total 1902.
Stocks, April 30..... tons	254	49 =	303	555	492
Arrivals, May.....	458	261 =	719	1026	1040
Aggregating.....	712	310 =	1022	1581	1532
Deliveries, May.....	437	258 =	695	1040	980
Stocks, May 31.....	275	52 =	327	541	552
PARÁ.					
	1904.	1903.	1902.	1904.	1903.
Stocks, April 30..... tons	110	150	2240	495	1675
Arrivals, May.....	1085	2070	1580	470	650
Aggregating.....	1195	2220	3820	965	2325
Deliveries, May.....	1000	2105	3740	525	925
Stocks, May 31.....	195	115	80	440	1400
ENGLAND.					
	1904.	1903.	1902.	1904.	1903.
World's visible supply, May 31..... tons	1537	2096	3650		
Pará receipts, July 1 to May 31.....	24,890	25,226	25,494		
Pará receipts of Caucho, same dates.....	4204	3704	3236		
Afloat from Pará to United States, May 31...	95	500	533		
Afloat from Pará to Europe, May 31.....	480	440	410		

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound—show a slight decline from the last published prices, as follows:

Old Rubber Boots and Shoes—Domestic.....	5½ @ 5½
Do —Foreign.....	4½ @ 4½
Pneumatic Bicycle Tires.....	4 @ 4½
Solid Rubber Wagon and Carriage Tires.....	7
White Trimmed Rubber.....	8½ @ 8¾
Heavy Black Rubber.....	4
Air Brake Hose.....	2½ @ 2½
Fire and Large Hose.....	1¾ @ 1¾
Garden Hose.....	1¾ @ 1½
Matting.....	¾ @ 1

In regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 68 William street, New York) advises us as follows:

"During June the money market has continued about the same as in May, call loans ruling at 1 @ 1½ per cent., and paper being taken quite freely by city and out-of-town banks at 4½ @ 6 per cent., according to grade."

London.

EDWARD TILL & Co. [June 1] report stocks:

	1904.	1903.	1902.
LONDON { Pará sorts..... tons	—	—	—
{ Borneo.....	22	13	121
{ Assam and Rangoon.....	5	5	23
{ Other sorts.....	227	209	432
Total.....	254	227	576
LIVERPOOL { Pará.....	446	1402	2084
{ Caucho.....	305	243	390
{ Other sorts.....	662	376	637
Total, United Kingdom.....	1667	2248	3687
Total, May 1.....	1644	2539	3788
Total, April 1.....	1367	2525	3326

PRICES PAID DURING MAY.

	1904.	1903.	1902.
Pará fine, hard..... 4/ 9 @ 4/ 0½	3/10½ @ 3/10¾	2/11½ @ 3/1½	
Do soft..... 4/ 8 @ 4/ 9¾	No sales.	No sales	
Negroheads, scrappy..... 3/ 9	3/ 1 @ 3/ 1¼	2/ 5	
Do Cametá..... 3/ @ 2/11	2/ 7 @ 2/ 9	2/ 1 @ 2/ 3¼	
Bolivian..... 4/10 @ 4/11	No sales.	3/0¼	
Caucho ball..... 3/ 3¾ @ 3/ 5	3/ 0½ @ 3/ 0¾	2/ 4 @ 2/ 4½	
Do slab..... 2 10¼ @ 2 11	2 4½ @ 2 6	1 11½ @ 2 1	

JUNE 17.—The market for Pará sorts has shown increased depression, prices having declined in a fortnight about 1½d. per pound. Toward the close, however, renewed firmness has prevailed, and most of the drop has been recovered. A fair business has been done, including fine hard down to 4s. 8½d., and since at 4s. 9d. and buyers, chiefly new delivery. Medium kinds have met a rather slow demand, being influenced by the dullness of Pará, and little business has been done. No auction this week.

Ceylon.—At the auction on June 10, twenty-four packages were offered and sold. Fine biscuits (from Pará seed) sold at 5s. @ 5s. 1d.; fair to good, but dark in color, at 4s. 9d @ 4s. 10d.; scrap, good to fine clean, at 4s. 5d. @ 4s. 5½d.

Bordeaux.

PRICES JUNE 18—FRANCS PER KILOGRAM.

Conakry niggers, red. 10 50@10.60	Lahou twists..... 9 @ 9.15
Soudan niggers..... 9 80@10.20	Lahou niggers..... 8.90@ 9
Soudan twists..... 9 @ 9.30	Lahou cakes..... 8. @ 8.10
Cassamance, A P... 8. @ 8.25	Madagascar:
Cassamance, A... 7 25@ 7.35	Majunga..... 7. @ 7.75
Cassamance, A M... 6 15@ 6.20	Tamatave..... 8 50@ 9.10

[10 francs per Kilo = 37½ cents per Pound.]

STOCKS same date, 31,110 kilograms, including Balata 2000.

R. HENRY.

Rubber Receipts at Manaos.

DURING May and the first eleven months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	MAY.			JULY-MAY.		
	1904.	1903.	1902.	1904.	1903.	1902.
Rio Purús—Acre..... tons	358	420	360	5883	5912	6673
Rio Madeira.....	113	89	62	2641	2249	2750
Rio Juruá.....	185	183	137	3044	3576	3588
Rio Javary—Iquitos.....	13	29	88	2219	1502	1301
Rio Solimões.....	20	43	22	828	1348	1530
Rio Negro.....	46	16	13	468	651	369
Total.....	735	780	682	15,083	15,238	16,217
Caucho.....	632	596	498	3800	3354	3285
Total.....	1367	1376	1180	19,483	18,592	19,502

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: The values of Pará rubber having declined 2 to 3 pence per pound since our sale in May, the Antwerp sale which took place on June 14 showed some decline. The finer grades, especially Kasais, declined only 10 @ 20 centimes, whereas Upper Congos—partially sticky and ill conditioned—were 25 @ 50 centimes lower. The average may be calculated at 30 centimes, or about 3 per cent., decline on May values. The quantity sold—270 tons out of 292 offered—is very satisfactory. The principal lots sold were:

	Valuation.	Sold at.
70 tons Upper Congo balls	francs 10.25	9.75
13 " Uelé strips.	9.80	9.65 @ 9.75
15 " Lake Leopold II.	9.40	9.45 @ 9.47½
14 " Aruwimi pieces.	9.55	9.55
18 " Lomami strips.	10.60	10.02 ½ @ 10.10
6 " Prime Red Kasai.	11.15	11.10
20 " Kasai—Loanda.	10.	9.90
19 " Kasai—Loanda, Sankuru.	9.67½	9.32½

The next sale will take place on July 8, when about 400 tons will be catalogued. C. SCHMID & CO., SUCCESSEURS.

Antwerp, Belgium June 16, 1904.

ANTWERP RUBBER STATISTICS FOR MAY.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, Apr. 31. kilos	441,621	488,799	500,664	813,818	821,820
Arrivals in May.	737,526	352,833	537,536	356,915	445,062
Congo sorts	685,086	322,725	489,902	315,575	410,448
Other sorts	52,440	30,108	47,634	41,340	34,614
Aggregating.	1,179,147	841,632	1,038,200	1,170,733	1,266,882
Sales in May.	436,932	499,040	573,525	345,291	389,256
Stocks, May 31.	742,215	342,592	464,675	825,442	877,626
Arrivals since Jan. 1	2,554,426	2,104,704	2,346,859	2,543,593	2,729,287
Congo sorts	2,128,132	1,888,264	2,185,325	2,267,235	2,245,718
Other sorts.	426,294	216,440	158,534	276,358	483,569
Sales since Jan. 1.	2,423,111	2,420,217	2,296,893	2,332,190	2,143,652

RUBBER ARRIVALS AT ANTWERP.

MAY 25.—By the *Anversville*, from the Congo:

M. S. Cols.	kilos	9,300
Société Coloniale Anversoise	(Sud Kamerun)	6,000
Do	(La Lulonga)	6,000
Do	(Belge du Haut Congo)	10,300
Do	(Cie. de Lomami)	9,200
Bunge & Co	(Société Générale Africaine)	183,000
Do	(Chemins de fer des Grand Lacs)	2,500
Do	(Société Anversoise)	50,300
Do	(Société Isangi)	7,500
Do	(Cie. du Kasai)	52,400
Société A B I R		88,000
Comptoir Commercial Congolais.		40,000
Société Equatoriale Congolaise.		2,000
Cie. Commerciale des Colonies.		1,100

TRADE

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Dam, Surgical Bands, and the

"Elliott Get There" Golf Ball.

Washing, Refining, and Calendering for the Trade.

Mention The India Rubber World when you write.

Charles Dethier	(Société Belgika)	1,000
Comptoir des Produits Coloniaux.		5,000 473,600

JUNE 13.—By the *Leopoldville*, from the Congo:

Bunge & Co.	(Société Général Africaine)	kilos	112,000
Do	(Chemins de fer des Grand Lacs)		11,500
Do	(Société Isangi)		3,200
Do	(Sultanats du Haut Obangi)		11,000
Bunge & Co.	(Société "La Kotto")		800
Do	(Société Anversoise)		24,200
Société Equatoriale Congolaise. (Société L'Ikelemba)			2,000
Société A B I R			44,600
Société Coloniale Anversoise. (Belge du Haut Congo)			2,400
Do	(Cie. du Kasai)		2,200
Do	(Cie. de Lomami)		6,800
M. S. Cols.			7,900
W. Mallinckrodt & Co.	(Alimaïenne)		5,000
Comptoir des Produits Coloniaux.			2,000
Charles Dethier	(La Haut Sangha)		16,000 251,600

IMPORTS FROM PARA AT NEW YORK

[The Figures Indicate Weights in Pounds.]

June 3.—By the steamer *Dominic*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
A. T. Morse & Co.	18,200	2,300	47,700	9,500=	77,700
New York Commercial Co.	44,200	7,500	19,700	2,900=	74,300
Poel & Arnold.			35,200	36,300=	71,500
United States Rubber Co.				41,000=	41,000
Meyer & Busweiler*.	3,400		2,700		6,100
Hagemeyer & Brunn.	3,300	1,200	1,300		5,800
Lionel Hagenaaers & Co.	3,700		1,100		4,800
Total.	72,800	11,000	107,700	89,700=	281,200

June 14.—By the steamer *Maranhense*, from Manáos and Pará:

United States Rubber Co.			125,000=	125,000
Poel & Arnold.		6,000	43,800	55,800=
A. T. Morse & Co.	21,500	9,600	33,100	
New York Commercial Co.	8,600	2,100	28,400	300=
Meyer & Busweiler*.	8,400		4,000	
Lionel Hagenaaers & Co.	7,600		2,800	
Lawrence Johnson & Co.				9,900=
G. Amsinck & Co.	3,400		2,700	
Total.	49,500	17,700	114,800	191,000=

June 24.—By the steamer *Grangense* from Manáos and Pará:

A. T. Morse & Co.	17,400	2,500	63,400	42,600=
United States Rubber Co.				64,400=
New York Commercial Co.	11,500	2,000	19,100	11,400=
Poel & Arnold.		4,500	24,900	
G. Amsinck & Co.	7,700	1,400	5,500	
Edmund Reeks & Co.	5,000		3,900	
Lionel Hagenaaers & Co.	4,200		1,400	
Total.	45,800	10,400	118,200	118,400=

* [Shipment connected with failure of William Wright & Co.]

[NOTE.—The steamer *Benedict*, from Pará due at New York on July 5, carries 40 tons of Rubber and Cauchó.]

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OLD MACHINERY PURCHASED.
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HOSE VULCANIZER.—Will purchase second hand, if in good order and condition. Address, with full particulars, P. O. Box 257, WILMINGTON, DELAWARE. [588]

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MANUFACTURERS of Mechanical Goods, Clothing, Sundries, etc., who desire to increase their business at small expense by adding a shoe department, can secure an experienced Superintendent and also an experienced Manager and Salesman both capable with the recent large advance in prices to show a profitable business from the start. Best references. Address S. C., P. O. Box 3488, Boston, Mass. [547]

PARA RUBBER VIA EUROPE.

	POUNDS.
MAY 25.—By the <i>Oceanic</i> =Liverpool:	
Charles Ahrenfeldt & Son (Caucho).....	22,000
MAY 25.—By the <i>Yucatan</i> =Mollendo:	
Chicago Bolivian Rubber Co. (Fine).....	4,000
JUN. 1.—By the <i>Prins Willem I</i> =Guayra:	
Thebaud Brothers (Fine).....	3,500
Thebaud Brothers (Coarse).....	2,500
For Hamburg (Coarse).....	1,500 7,500
JUN. 16.—By the <i>Maraval</i> =Bolívar:	
Kunhardt & Co. (Coarse).....	2,000
Middleton & Co. (Fine).....	1,800
Thebaud Brothers (Fine).....	1,500 5,300
JUN. 22.—By the <i>Yucatan</i> =Mollendo:	
Fliat & Co. (Caucho).....	11,000
Chicago Bolivian Rubber Co. (Fine).....	3,000 14,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

	POUNDS.
MAY 24.—By the <i>Altai</i> =Savannah, etc.:	
G. Amsinck & Co.....	1,100
Kunhardt & Co.....	750
Graham, Hinkley & Co.....	700
Banco de Exportasos.....	300
John Boyd, Jr. & Co.....	100
J. A. Paul & Co.....	200
A. D. Straus & Co.....	300
For Havre.....	3,500 7,100
MAY 25.—By the <i>Yucatan</i> =Colon:	
G. Amsinck & Co.....	6,700
E. B. Strout.....	6,400
American Trading Co.....	5,300
Roldan & Van Sickle.....	2,000
A. M. Capens & Sons.....	1,900
Lawrence Johnson & Co.....	1,500
Meyer Hecht.....	1,500
A. Santos & Co.....	1,300
Alberto Dumarest.....	1,000
Isaac Brandon & Bros.....	1,300
A. Rosenthal & Sons.....	800
Jimenez & Escobar.....	700
Maldonado & Co.....	300 30,700
MAY 25.—By the <i>Oceanic</i> =Liverpool:	
Hirsch & Kaiser.....	19,200
Lawrence Johnson & Co.....	3,500 27,800
MAY 25.—By the <i>Matanzas</i> =Mexico:	
Graham, Hinkley & Co.....	2,200
Harburger & Stack.....	2,000
L. N. Chemedlin & Co.....	800
James Bondy Sons.....	500
J. W. Wilson & Co.....	200
For Europe.....	16,000 21,700
MAY 27.—By the <i>El Alba</i> =New Orleans:	
A. N. Rotholz.....	7,000
G. Amsinck & Co.....	7,000
A. T. Morse & Co.....	5,000
Manhattan Rubber Mfg. Co.....	3,000 22,000
MAY 28.—By the <i>Yumuri</i> =Mexico:	
George A. Alden & Co.....	15,500
H. Marquardt & Co.....	3,300
E. Steiger & Co.....	700
E. N. Tibbals & Co.....	500
L. N. Chemedlin & Co.....	600 20,600
JUN. 1.—By the <i>Sarnia</i> =Port Limon:	
Graham, Hinkley & Co.....	2,000
Isaac Kuble & Co.....	1,500
C. Delgado.....	600
D. A. De Lima & Co.....	700
Isaac Brandon & Bros.....	600
For London.....	3,000 8,400
JUN. 1.—By the <i>City of Washington</i> =Colon:	
Hirzel, Feltman & Co.....	6,800
George A. Alden & Co.....	4,400
Piza, Nephews & Co.....	2,400
Meyer Hecht.....	1,200
Silva, Bussenius & Co.....	1,000
Eggers & Heinlein.....	800
L. Johnson & Co.....	600
G. Amsinck & Co.....	500
A. N. Rotholz.....	300
Lauman & Kemp.....	200
R. G. Barthold.....	200 18,400
JUN. 2.—By the <i>Moorish Prince</i> =Bahia:	
J. H. Rossbach & Bros.....	22,500
Hirsch & Kaiser.....	12,500 35,000
JUN. 3.—By the <i>El Cid</i> =New Orleans:	
Manhattan Rubber Mfg. Co.....	17,000
JUN. 4.—By the <i>Vigilancia</i> =Mexico:	
E. Steiger & Co.....	2,500
H. Marquardt & Co.....	4,500
E. N. Tibbals & Co.....	800
American Trading Co.....	1,000 8,800

CENTRALS Continued.

JUN. 6.—By the <i>Umbria</i> =Liverpool:	
George A. Alden & Co.....	9,000
JUN. 7.—By the <i>Albany</i> =Greystown, etc.:	
E. B. Strout.....	3,000
A. D. Straus & Co.....	1,500
D. A. De Lima & Co.....	2,000
Mecke & Co.....	1,800
Pedro A. Lopez.....	1,000
Isaac Brandon & Bros.....	700
G. Amsinck & Co.....	500 10,500
JUN. 8.—By the <i>Seguranca</i> =Colon:	
Hirzel, Feltman & Co.....	13,000
G. Amsinck & Co.....	4,700
Roldan & Van Sickle.....	3,800
L. Johnson & Co.....	2,700
A. Santos & Co.....	1,500
Dumarest & Co.....	1,500
Meyer Hecht.....	1,300
Isaac Brandon & Bros.....	1,100
Livingstone & Co.....	1,000
Eggers & Heinlein.....	1,000
Silva Bussenius & Co.....	1,000
Everett Heaney & Co.....	500
Isaac Kuble & Co.....	700
A. M. Capen & Sons.....	700
American Trading Co.....	300 35,500
JUN. 9.—By the <i>Niegora</i> =Tampico:	
For Europe.....	12,000
JUN. 9.—By the <i>Cedric</i> =Liverpool:	
George A. Alden & Co.....	7,000
L. Johnson & Co.....	3,500 10,500
JUN. 8.—By the <i>Titian</i> =Bahia:	
J. H. Rossbach & Bros.....	34,000
Hirsch & Kaiser.....	26,000
A. D. Hitch & Co.....	2,500 62,500
JUN. 11.—By the <i>Hacana</i> =Mexico:	
Harburger & Stack.....	8,000
E. Steiger & Co.....	1,000
For Hamburg.....	7,000 16,000
JUN. 13.—By the <i>Comus</i> =New Orleans:	
A. T. Morse & Co.....	12,000
A. N. Rotholz.....	2,000
Eggers & Heinlein.....	1,000
G. Amsinck & Co.....	700 15,700
JUN. 15.—By the <i>Alliance</i> =Colon:	
Hirzel, Feltman & Co.....	6,100
G. Amsinck & Co.....	3,700
Meyer Hecht.....	3,600
E. B. Strout.....	2,900
W. Loaliza & Co.....	400 15,800
JUN. 15.—By the <i>Siberia</i> =Port Limon:	
G. Amsinck & Co.....	1,500
Graham, Hinkley & Co.....	1,000
Suzarte & Whitney.....	700
Isaac Brandon & Bros.....	700
A. D. Straus & Co.....	300
D. A. De Lima & Co.....	500 4,700
JUN. 18.—By the <i>Monterey</i> =Mexico:	
Fred. Probst & Co.....	2,000
Graham, Hinkley & Co.....	2,000
L. N. Chemedlin & Co.....	1,000
Isaac Kuble & Co.....	700
H. Marquardt & Co.....	600
E. Steiger & Co.....	500 6,800
JUN. 20.—By the <i>Byron</i> =Bahia:	
J. H. Rossbach & Bros.....	75,000
Hirsch & Kaiser.....	9,000
A. D. Hitch & Co.....	5,000 89,000
JUN. 20.—By the <i>Proteus</i> =New Orleans:	
A. T. Morse & Co.....	3,700
Eggers & Heinlein.....	2,300
A. S. Lascelles & Co.....	700 6,700
JUN. 21.—By the <i>Valencia</i> =Greystown:	
G. Amsinck & Co.....	2,600
Andreas & Co.....	500
Livingstone & Co.....	500
Graham, Hinkley & Co.....	500 4,000
JUN. 22.—By the <i>Yucatan</i> =Colon:	
G. Amsinck & Co.....	8,700
Hirzel, Feltman & Co.....	4,100
A. Santos & Co.....	4,000
Meyer Hecht.....	3,700
L. Johnson & Co.....	3,000
Dumarest Bros & Co.....	2,100
Livingstone & Co.....	2,900
A. D. Straus & Co.....	1,500
A. Rosenthal & Sons.....	1,300
Roldan & Van Sickle.....	1,000
J. Menendez & Co.....	200 32,500
MAY 24.—By the <i>Finland</i> =Antwerp:	
Poel & Arnold.....	89,000
A. T. Morse & Co.....	33,000

AFRICANS.

	POUNDS.
MAY 24.—By the <i>Finland</i> =Antwerp:	
Poel & Arnold.....	89,000
A. T. Morse & Co.....	33,000

AFRICANS Continued.

Joseph Cantor.....	20,000
George A. Alden & Co.....	12,500
Robinson & Tallman.....	4,500 150,000
MAY 25.—By the <i>Oceanic</i> =Liverpool:	
George A. Alden & Co.....	20,000
United States Rubber Co.....	18,000
Rubber Trading Co.....	3,000 41,000
MAY 27.—By the <i>Pratoria</i> =Hamburg:	
A. T. Morse & Co.....	11,500
Poel & Arnold.....	7,500 19,000
MAY 28.—By the <i>Lucania</i> =Liverpool:	
A. T. Morse & Co.....	11,000
Rubber Trading Co.....	7,000
Poel & Arnold.....	2,000 20,000
MAY 31.—By the <i>Moltke</i> =Hamburg:	
Poel & Arnold.....	21,000
JUN. 1.—By the <i>Vaderland</i> =Antwerp:	
Poel & Arnold.....	68,000
Rubber Trading Co.....	60,000 128,000
JUN. 2.—By the <i>Tentonic</i> =Liverpool:	
United States Rubber Co.....	51,000
Henry A. Gould, Co.....	3,500 54,500
JUN. 2.—By the <i>Graf Waldersee</i> =Hamburg:	
A. T. Morse & Co.....	30,000
Poel & Arnold.....	7,000 43,000
JUN. 6.—By the <i>Umbria</i> =Liverpool:	
Poel & Arnold.....	22,000
A. T. Morse & Co.....	5,000 27,000
JUN. 7.—By the <i>Kronland</i> =Antwerp:	
Poel & Arnold.....	34,000
Rubber Trading Co.....	11,000 45,000
JUN. 10.—By the <i>Cedric</i> =Liverpool:	
United States Rubber Co.....	57,000
Rubber Trading Co.....	11,000
A. T. Morse & Co.....	3,500 71,500
JUN. 13.—By the <i>Peninsular</i> =Lisbon:	
United States Rubber Co.....	67,000
JUN. 16.—By the <i>Georgic</i> =Liverpool:	
George A. Alden & Co.....	67,000
JUN. 16.—By the <i>Pennsylvania</i> =Hamburg:	
A. T. Morse & Co.....	15,000
JUN. 20.—By the <i>Arabic</i> =Liverpool:	
United States Rubber Co.....	56,000
Poel & Arnold.....	9,000 65,000
EAST INDIAN.	POUNDS.
MAY 27.—By the <i>Wildenfels</i> =Calcutta:	
J. H. Recknagel & Son.....	4,500
MAY 31.—By the <i>Germanic</i> =London:	
Poel & Arnold.....	21,000
MAY 31.—By the <i>Albenga</i> =Singapore:	
Muller, Schall & Co., Wright assignee.....	37,000
Poel & Arnold.....	52,000
Pierre T. Betts.....	17,000 106,000
JUN. 6.—By the <i>St. Paul</i> =London:	
Poel & Arnold.....	25,000
JUN. 6.—By the <i>Hong Wan I</i> =Singapore:	
Poel & Arnold.....	35,000
Winter & Smillie.....	11,000 46,000
JUN. 11.—By the <i>Kennebec</i> =Singapore:	
Winter & Smillie.....	9,000
Robert Branss & Co.....	14,000
Pierre T. Betts.....	10,000
William McKerrow & Co.....	7,000 40,000
JUN. 11.—By the <i>Philadelphia</i> =London:	
Poel & Arnold.....	15,000
JUN. 16.—By the <i>Neuenfels</i> =Calcutta:	
J. H. Recknagel & Son.....	11,000
PONTIANAK.	POUNDS.
MAY 31.—By the <i>Albenga</i> =Singapore:	
Muller, Schall & Co.....	600,000
Poel & Arnold.....	100,000
W. R. Russell & Co.....	160,000 860,000
JUN. 6.—By the <i>Hong Wan I</i> =Singapore:	
George A. Alden & Co.....	280,000
Poel & Arnold.....	135,000
Robert Branss & Co.....	175,000
Winter & Smillie.....	15,000 605,000
JUN. 11.—By the <i>Kennebec</i> =Singapore:	
Winter & Smillie.....	220,000
W. R. Russell & Co.....	80,000
George A. Alden & Co.....	55,000
Robert Branss & Co.....	40,000 565,000

GUTTA-PERCHA AND BALATA.

MAY 31.—By the *Albenga*=Singapore:

Pierre T. Betts	4,500	
W. H. Wadleigh	3,500	8,000

JUN. 11.—By the *Kenneth*=Singapore:

George A. Alden & Co	2,200	
Robert Brauss & Co	9,000	11,200

JUN. 16.—By the *Pennsylvania*=Hamburg:

To order	5,000	
Traun Rubber Co.	500	5,500

BALATA.

MAY 24.—By the *Etruria*=Trinidad:

George A. Alden & Co	3,500	
Leaycraft & Co	5,500	
For Hamburg	10,000	19,000

MAY 31.—By the *Germanic*=Liverpool:

Henry A. Gould Co.	4,500	
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JUN. 21.—By the *Caracas*=La Guayra:

Thebaud Brothers	2,500	
------------------------	-------	--

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—MAY.

Imports:	POUNDS.	VALUE.
India-rubber	3,575,063	\$2,590,297
Gutta-percha	84,654	26,455
Gutta-jelutong (Pontianak) ..	858,893	24,884
Total	4,518,510	\$2,641,636

Exports:

India-rubber	92,855	\$ 68,501
Reclaimed rubber	168,404	20,126
Rubber Scrap Imported	1,001,816	\$112,689

BOSTON ARRIVALS.

MAY 2.—By the *Sylvania*=Liverpool:

George A. Alden & Co.—African....	66,080
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MAY 2.—By the *Cretic*=Liverpool:

George A. Alden & Co.—African....	33,595
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MAY 2.—By the *Cretic*=Liverpool:

Poel & Arnold—Central.....	2,315
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MAY 10.—By the *Michigan*=Liverpool:

George A. Alden & Co.—African....	6,361
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MAY 11.—By the *Swazi*=Calcutta:

George A. Alden & Co.—East Indian	5,435
-----------------------------------	-------

MAY 13.—By the *Philadelphia*=London:

George A. Alden & Co.—East Indian.	2,097
------------------------------------	-------

MAY 17.—By the *Bosnia*=Hamburg:

Boston Woven Hose and Rubber Co.	1,973
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MAY 17.—By the *Cestrian*=Liverpool:

George A. Alden & Co.—Central.....	2,263
------------------------------------	-------

MAY 24.—By the *Sachem*=Liverpool:

Poel & Arnold—Caucho.....	11,136
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MAY 28.—By the *Sylvania*=Liverpool:

George A. Alden & Co.—Central.....	14,212
Total.....	145,467

[Value, \$94,491.]

MAY EXPORTS OF INDIA-RUBBER FROM PARA (IN KILOGRAMS)

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Emok, Schrader & Co.....	11,220	1,020	36,096	—	48,336	155,902	19,851	47,600	52,669	276,022	324,358
Frank da Costa & Co.....	8,076	874	47,068	—	56,018	31,854	3,196	17,696	1,200	53,946	109,964
Adelbert H. Alden	21,028	3,788	14,579	1,092	40,487	12,275	1,916	16,976	713	31,880	72,367
R. Suarez & Co.....	—	—	—	—	—	52,800	11,200	4,612	—	68,612	68,612
J. Marques & Co.....	3,764	—	3,434	—	7,198	18,125	—	9,832	—	27,957	35,155
Kanthack & Co.....	—	—	—	—	—	8,251	4,405	5,065	—	17,721	17,721
Singlehurst Brocklehurst & Co	—	—	1,820	—	1,820	9,249	2,654	2,249	—	14,152	15,972
Pires, Teixeira & Co.....	3,644	—	1,245	—	4,889	—	—	—	—	—	4,889
Denis Crouau & Co.....	—	—	—	—	—	801	176	819	—	1,796	1,796
Direct from Manãos.....	70,679	17,842	29,346	87,980	205,847	177,840	31,910	59,934	152,083	421,767	627,614
Direct from Iquitos.....	—	—	—	—	—	4,224	1,450	3,285	84,896	93,855	93,855
Total for May.....	118,411	23,524	133,588	89,072	364,595	471,321	76,758	168,068	291,561	1,007,708	1,372,303
Total July-April.....	7,180,961	1,487,316	4,659,502	789,330	14,117,109	7,286,527	900,023	2,395,290	2,738,955	13,320,795	27,437,904
TOTAL SINCE JULY 1, 1903	7,299,372	1,510,840	4,793,090	878,402	14,481,704	7,757,848	976,781	2,563,358	3,030,516	14,328,503	28,810,207

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (IN POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1904.....	4,956,048	217,446	4,738,602	April, 1904.....	4,710,048	2,713,984	1,996,064
January-March.....	23,266,349	909,245	22,357,104	January-March.....	16,589,216	10,119,430	6,469,786
Four months, 1904.....	28,222,397	1,126,691	27,095,706	Four months, 1904.....	21,299,264	12,833,414	8,465,850
Four months, 1903.....	20,072,501	999,095	19,073,406	Four months, 1903.....	20,578,768	13,309,744	7,269,024
Four months, 1902.....	19,789,635	1,238,131	18,551,501	Four months, 1902.....	19,686,688	10,074,960	9,611,728

GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1904.....	2,954,600	629,860	2,324,740	April, 1904.....	150,700	nil.	150,700
January-March.....	9,189,180	3,149,740	6,039,440	January-March.....	447,480	25,960	421,520
Four months, 1904.....	12,143,780	3,779,600	8,364,180	Four months, 1904.....	598,180	25,960	572,220
Four months, 1903.....	12,769,240	5,073,640	7,695,600	Four months, 1903.....	640,080	25,960	614,120
Four months, 1902.....	9,933,220	3,278,220	6,655,000	Four months, 1902.....	515,020	42,460	472,560

FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
April, 1904.....	1,673,540	1,204,500	469,040	April, 1904.....	297,900	nil.	297,900
January-March.....	5,971,680	3,824,260	2,147,420	January-March.....	769,340	10,340	759,000
Four months, 1904.....	7,645,220	5,028,760	2,616,460	Four months, 1904.....	1,066,340	10,340	1,056,000
Four months, 1903.....	5,559,180	2,779,260	2,779,920	Four months, 1903.....	959,640	12,320	947,320
Four months, 1902.....	6,556,440	2,760,720	3,795,720	Four months, 1902.....	916,520	1,980	914,540

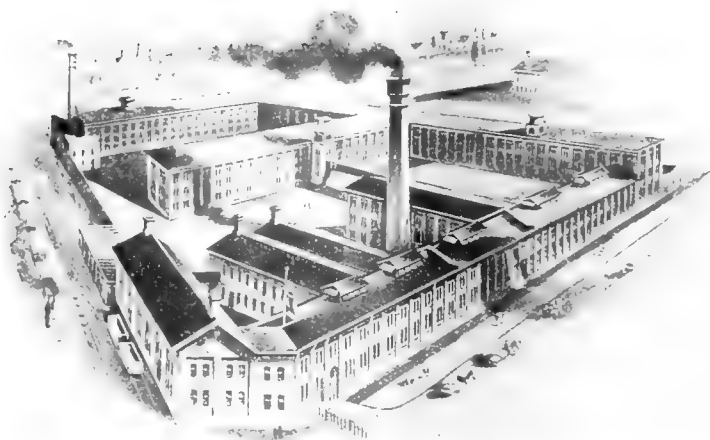
NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canadian consumption.

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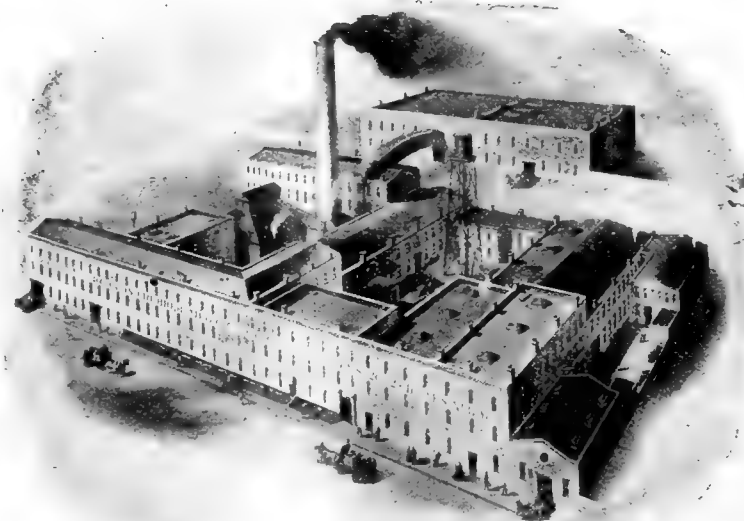
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INDIA RUBBER WORLD

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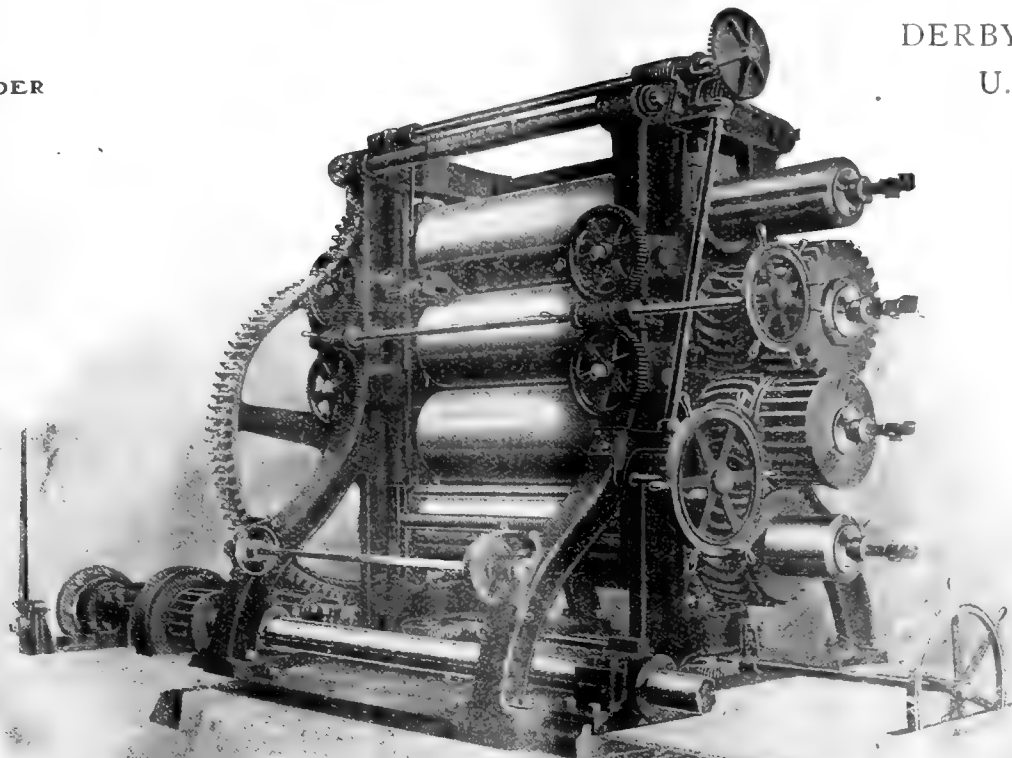
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A QUESTION OF LABOR.

AS will be seen from a diagram on another page, the price of crude rubber, taking fine Pará as the standard, has reached a higher level than at any time in the past—if we except the spasmodic approach to \$1.20 caused by Vianna twenty years ago. Doubtless a decline from the present figures will be seen within a few months, just as fluctuations occur every year, but with all its changes, the general tendency of rubber is upward.

Referring to the rubber market review printed in the first issue of THE INDIA RUBBER WORLD, it appears that in August, 1899—just fifteen years ago—fine Pará was quoted in New York at 60 cents. Our diagram, in this issue, shows that 60 cents has never been touched again; not for ten years has the price fallen below 70 cents; only during one year since 1896 has it gone below 80 cents; during five years out of the past seven the price has ranged for the most part over \$1.

It is a common thing to hear this advancing tendency attributed to the increasing demand for rubber, but this tells only half the story. More steel and copper and paper are consumed than formerly, and yet these materials have declined greatly in cost. Indeed, about the only raw material of importance that constantly becomes more expensive is rubber.

It would appear natural that, in view of the increasing consumption of a material so certain as rubber to continue permanently in demand, and of its constantly enhanced prices, a larger rate of production would result. Within recent years the principal rubber areas have been much more fully explored than had been done when the best rubber could be bought for 60 cents; there are better and more extensive shipping facilities; and we fancy that better arrangements exist for financing the movement of rubber. Yet the annual increase in output from the Amazon region—the most important single rubber producing area—is never great. Here are the figures for five years past:

Year ending June 30, 1900.....	tons 26,670
Year ending June 30, 1901.....	27,610
Year ending June 30, 1902.....	30,000
Year ending June 30, 1903.....	29,850
Year ending June 30, 1904.....	30,580

Surely larger figures would have been shown for some of these years—larger visible supplies would have come into existence—if it had been possible for more rubber to be brought out. Without doubt there are yet considerable areas in South America, as well supplied as any other with rubber, which have not been exploited. A widespread belief that this is the case has appealed to enterprising persons in many countries, inspiring an ambition to revolutionize the business of rubber gathering by the investment of capital and the introduction of new business ideas. Up to date, however, there are no successes in this direction to be recounted, and it appears that the consumers of rubber must depend for their supplies upon the old system—at least until the business of planting has developed enough to supply a great deal of rubber.

As for the Amazon region, the production of rubber is a question of labor. The sparse native population appears

to be worked to the limit, and the introduction of alien labor has resulted only in failure. In this connection we may draw upon a recent report by a most capable observer, Mr. Louis H. Aymé, the new United States consul at Pará, who has written at length upon the Amazon country as a field for investment. He quotes from an American citizen, long resident there, as follows:

The first difficulty to be encountered by any American in this region would be the great scarcity of labor, which is the principal drawback, only the native Indians being available, and these being almost practically owned by the large rubber men by a system of indebtedness running back many years. Most of these debts are, undoubtedly, but a false paper indebtedness, but they are effective to bar the only labor to be had, from any new comer. And should the intending settler resolve to work himself and depend on his own efforts, as is common with us in the United States, he will, necessarily, have to compete with this degraded class of labor, which is of course impracticable. Practically the only industry that is possible, on account of this scarcity of labor, is rubber, and that would be so only if it were practicable to unite a sufficient number of Indians under the above described indebtedness system, which would require years to accomplish, not to speak of methods that an American would hardly care to put into practice.

What matters it then, how much native rubber there may be on the Amazon's tributaries, if a limited number of Indians comprise the whole possible working force, and these are held in virtual bondage as the only means of inducing them to gather rubber? It is doubtful if the gathering of wild rubber in any country is attractive to labor of any sort, or if the laborers employed possess much independence of action. But it appears that none of the conditions here indicated are susceptible of change in the near future, and that whoever insists upon using rubber must expect to pay well for it.

THE FUTURE OF AFRICAN RUBBER.

ON another page of this paper Mons. van den Kerckhove, of Belgium, a widely recognized authority, and who has returned lately from a visit to Africa, expresses the opinion that the rubber production of that continent is declining. He goes into details regarding the rubber situation in different regions, predicting an increase here to offset a falling off there, but the sum total of his carefully formed views is that the native rubber resources of Africa are becoming exhausted.

It is an old story that, with the rubber species found in Africa, and with the methods of extraction in vogue there, production is not long maintained in any one spot. But the possibility existed that Mons. van den Kerckhove, when asked for an opinion as to the future of the African rubber supply, might consider the areas yet unworked sufficient in extent to keep up the present rate of export for a great while to come. It appears, however, that such is not his impression; that while the output of rubber from French Africa, under the intelligent encouragement of the government, may increase gradually for some years, the gain will be more than counterbalanced by the decline which already has begun in the Congo Free State.

It is true that our correspondent is not wholly discouraged over the outlook; he hopes to find in rubber planting on the Congo a continued support for the trading com-

panies now operating with native rubber, and a continued source of supplies of raw material for the rubber industry everywhere. We are loath to discourage any hopes that may be entertained regarding rubber planting, and it is far from us to claim to speak with authority on the culture of the vines or creepers which yield the greater part of the rubber produced in Africa. But the small amount of data available on this subject—small as compared with the experience recorded with the *Castilloa* and *Hevea* species, for instance—does not appear to us especially encouraging. Hence it is not surprising that one of the largest and oldest and most successful rubber trading companies in the Congo state, and the largest planter to date of *Landolphia* vines, has begun to create a special reserve fund to be invested in planting *Hevea* rubber in the Malay peninsula.

What is especially worthy of note in our letter from Brussels is that its author, who is particularly qualified to speak, is convinced that only by cultivation can the world's demand for rubber continue to be met. It is natural that he should wish for the success, with regard to planting, of his fellow countrymen—of investors whose interests no doubt are linked in many ways with his own. Should such success result, none will record it more gladly than ourselves.

THE CONSULS AND RUBBER.

OUR strictures last month on a certain consular report on "Rubber Culture in Mexico" were not due to the fact that the writer took an unfavorable view of the situation, but to his manifestation of a degree of ignorance unbecoming a gentleman and a United States official.

We have no quarrel with any one who, after an actual survey of the field, turns out a pessimist in regard to rubber culture. For one thing, if everybody were as enthusiastic about the future of rubber as some of our friends have been made by their success, the business of planting might be overdone.

But a man in a position to have his views printed as an official utterance of a great government, and liable therefore to have unusual weight, ought to be especially careful about his facts. We feel that real harm has been done to legitimate planting interests in the tropics by certain misguided consuls who have exaggerated beyond all reason the possibility of profits from rubber and other crops. Thus a consul may write rubbish on one side of the question as well as on the other, and the pity of it is that rubbish from such a source may be accepted by uninformed persons as "a complete guide for investors," to their financial loss.

The fact is that it is no part of the official duty of consuls to give advice about making investments. It is their duty to collect such facts bearing upon business conditions as may come under their notice and seem likely to be of general interest. If the reports thus prepared are made public by the government, it remains for the citizen to use his own judgment in dealing with facts. But for reports without any facts there can be no excuse.

Naturally there can be no accepted standard for consular

reports, but on the whole those made on commercial subjects by the American service are probably superior to those published by any other country. There remain a few consuls, however, who certainly do prove exceptions to the rule, and it seems that an undue proportion of these have found berths in districts where crude rubber interests have to be dealt with.

THE COTTON CROP OUTLOOK.

THE American cotton crop is passing through its crucial period. The idea generally prevails that it is doing fairly well, and that the largest yield in the history of the United States is promised this season. The department of agriculture, in its latest monthly report, gave the highest condition at the same date for years, with two exceptions, and this, together with the tremendous increase in acreage, readily leads to the conclusion that the possibilities are much beyond the ordinary. The weather bureau reports and advices from other than official sources lend color to the same theory, rendering it difficult to escape the conviction that a record breaking yield is in store. Railroad officials in the south and southwest have contributed largely to the fund of bearish predictions, and a crop of 12,000,000 bales seems to be the minimum in the minds of these gentlemen.

But it cannot be denied that there is another month full of possibilities, and it will not do to take a too optimistic view of the situation. The whole critical period lies within the next five weeks. Already complaints are more frequent regarding the future process. There has been too much rain in the Mississippi and Arkansas valleys, and there is too rapid growth of stalk, while the plant has failed to fruit rapidly. Some planters place the damage on account of rain at from 10 to 15 per cent., and the prospect is far less favorable than it was a fortnight ago. It is now feared that the weather will, after a long period of rainfall, turn very hot, thus inflicting serious injury. Some are anticipating that with a change of high temperature the crop will suffer a similar decline to that experienced in 1896, when the most magnificent prospects ever known were blighted by excessive heat, following a period of prolonged rainfall such as that through which the south has just been passing.

Manipulation, of course, is the keynote to the changes in prices. The recent advances to more than 10 cents for September delivery and to above 9.80 for December, in the minds of many, bore the earmarks of manipulation. Sentiment is naturally bearish, and the main features are favorable to a lower range of values. The southern cotton manufacturers are not all agreed as to the basis of staple prices for cotton goods to be consumed next year. They apparently do not, however, vary widely in their opinions, as is shown by the expressions of visitors to the New York market recently, who have had ample opportunity to study the new crop situation. The most bearish mill man who has been heard to talk places the basis at 9 cents, while a few say 9½ cents, but the majority are calculating on paying 10 cents for their cotton. They claim that the southern planters are too astute to allow the price to go below the latter figure. It is known that certain manufacturers of cotton duck are planning to do business on this basis.

Wide fluctuations have occurred between 13½ cents in February and 10.70 to-day. The variations in the price of spot cotton have been in sympathy with the market for futures, which is influenced by the favorable outlook for a larger crop. Actual spot business has been small, and the low prices now prevailing do not represent a corresponding shrinkage in the

value of the cotton in stock. They have been brought about by the abnormal conditions now prevailing. From a very conservative calculation it is not safe for the mechanical rubber people, or any of the other consumers of cotton duck and light weight sheetings, to figure on paying prices based on anything below 9½ cent cotton, and probably 10 cents, the last mentioned figure depending on the development of the staple crop during the coming five weeks.

There are other factors than the weather to take into account in figuring on a large crop, the most important of which is the labor question. It is held by many that it will be impossible to pick more than 11,000,000 bales under the most favorable conditions. Planters who have been endeavoring, at New York, to engage newly arrived foreigners have met with poor success, and the labor question is going to be a formidable one in the harvesting of the coming crop of cotton.

IN RESPONSE TO CONTINUED INQUIRIES regarding the new Colorado rubber mentioned so profusely in some Western newspapers, we are obliged to say that the production promised at the end of sixty days has not been realized. But rubber is an exceptionally costly commodity just now, while talk remains as cheap as ever. This may explain why the Colorado promoters thus far have produced more talk than rubber.

BOUNTY ON MEXICAN RUBBER.

IN our issue of June 1 appeared a copy of a letter addressed by the Editor of THE INDIA RUBBER WORLD to the President of Mexico, suggesting the offer of a bounty on rubber produced under cultivation in that republic. It was also suggested to those interested in planting that their coöperation in bringing this matter before the Mexican government would lend weight to the suggestion. From the following expressions, selected from a number of letters received on the subject by Mr. Pearson, it appears that the suggestion has met widespread approval among the planting companies, and that strong representations to the Mexican authorities will be made. Some of those heard from have been:

MEXICAN DEVELOPMENT AND CONSTRUCTION CO. OF WISCONSIN, Oshkosh, Wisconsin.

Relative to your letter of May 27 to his Excellency the President of Mexico in favor of the proposed bounty on cultivated rubber, we have acted on your valuable suggestion and trust all others interested in rubber cultivation will do the same.

ISTHMUS PLANTATION ASSOCIATION OF MEXICO—C. G. Cox, secretary, Milwaukee, Wisconsin.

I should think that the combined efforts of the Americans who are doing business in Mexico would have a great deal of weight in getting this bounty. Should we not succeed, the agitation cannot help but be beneficial to all interested in Mexico. I think you have started a good work, and I would ask you to kindly accept our thanks for your efforts in behalf of the raisers of cultivated rubber in Mexico.

TABASCO COMMERCIAL CO., Hartford, Connecticut.

We wish to thank you for your interest and attempts to help along the cause which we believe will come out all right for those who work honestly and patiently.

COMMONWEALTH MEXICAN PLANTATION ASSOCIATION, Chicago.

In regard to a bounty on Mexican rubber, we have written to President Diaz on the lines of your letter to him, and hope for good results.

THE TEHUANTEPEC RUBBER CULTURE CO.—Squire Gardsey, secretary, New York.

Under date of June 15 we wrote our Mr. Luther, calling attention to your letter to the President, dated May 27. He replies June 24, stating that he has written a letter to Senator Moran, at the Capital. I think Mr. Luther's effort will culminate in something, in that Senator Moran has recently become an active member of the Mexican Planters'

Association. The association itself, it seems to me, could accomplish more with the government than a few stray individuals at such long range. All contributions coming from reliable influential sources will, however, have their effect, and we will see what we can do from this end of the line.

MECHANICAL MUTUAL PLANTERS CO., Chicago.

It certainly would never have occurred to us to make this suggestion, but we deem it an exceedingly valuable one, and think that all American rubber growers in Mexico should be grateful to you in your undertaking.

THE VERA CRUX DEVELOPMENT CO., Canton, Ohio.

As per our letter of the 13th inst., stating that we would submit your letter to our Directors, which was done at their last meeting, and heartily approved the work you have undertaken; they directed that the secretary address President Diaz and the Mexican Minister at Washington, along the lines suggested in your communication.

CONSERVATIVE RUBBER PRODUCTION CO., San Francisco, California.

If we are able to do anything to help this matter along, we shall certainly do it.

ISTHMIAN PLANTATION ASSOCIATION OF MEXICO, Milwaukee, Wisconsin.

We have also noted the copy of your letter to President Diaz, and would say that we are with you heartily in this matter.

INVESTIGATION OF RUBBER.

THE Secretary of Agriculture at Washington having announced lately the installation, in connection with his department, of a laboratory to be devoted to researches in connection with leather and paper, a letter was addressed to him inquiring in regard to the disposition of the department toward affording similar facilities for investigations relating to rubber. The answer to this inquiry follows:

DEAR SIR: Replying to your inquiry in regard to the investigation of rubber, I beg to inform you that inasmuch as it is so nearly related to leather in many of its economical uses it will be committed to the Leather and Paper Laboratory. These investigations, however, can only be of a public character for the common benefit and not the particular benefit of any person or firm.

If there are investigations of this kind which you think should be made, I should be glad if you would communicate the fact to the chief of the Bureau of Chemistry of this Department. I am, respectfully,

JAMES WILSON,
Secretary.

Washington, D. C., July 23, 1904.

ANALYSIS OF CAOUTCHOUC MOLECULES.

FROM THE "GUMMI-ZEITUNG" (DRESDEN), JULY 1.

PROFESSOR DR. C. HARRIES on June 27 delivered a lecture at a meeting of the German Chemical Society on his work in reference to the ozonification of Caoutchouc. His experiments show that ozone may be readily added to the Caoutchouc molecule, and he proved that there are two double sets of bonds for $C_{10}H_{16}$. The "Ozonite" obtained is an explosive body and it has a chemical formula of $(C_{10}H^{16}O_6)_2$.

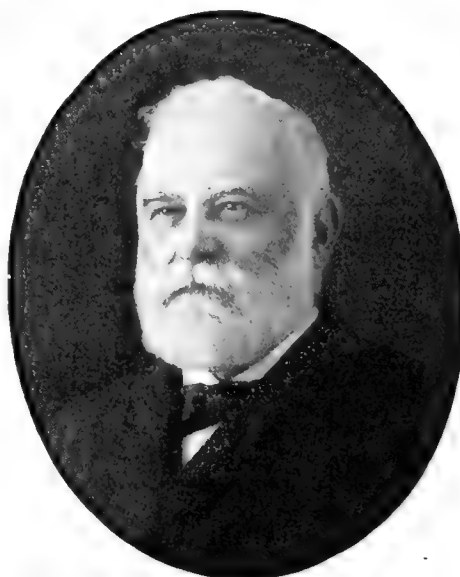
Professor Harries analyzed this "Ozonite" in a beautifully striking manner into levulinic acid, which is an acetone, and which is a derivative from succinic acid. The mystery which has surrounded the Caoutchouc molecule has by this work been now unveiled. Further experiments will follow and the practical advantages resulting from this scientific work will still further benefit progressive technology. Further details on this subject will be shortly published.

DR. FRANK AND DR. MARCKWALD.

THE OBITUARY RECORD.

THE Hon. James Pierce, who died at his home in Malden, Massachusetts, on July 8, was a prominent citizen of that place and had been throughout his life a successful business man. In addition to his other interests, he had been a director in the Boston Belting Co. for twenty years, and president of the corporation since August 13, 1902.

Mr. Pierce was born January 20, 1837, at Medford, Massachusetts. He was the son of Sewall and Mary S. Pierce and a grandson of Abel Pierce, a revolutionary soldier. He attended the public school at Woburn; at the age of 16 went to Lowell



as a clerk in a dry goods store; five years later went to Boston to fill a similar position; and at 24 went into business for himself. In 1871 he became interested in the manufacture of leather at Albion, New York, and 1887 transferred his interest in leather to Olean, New York, where he owned an important establishment to the time of his death. In the leather business he was successively a member of Lane, Pierce & Co., James & W. Pierce & Co., and the James Pierce Leather Co.

Mr. Pierce's residence, however, was at Malden, from March 29, 1858. He took an active interest in public affairs, and was a member of the first council elected in Malden after its incorporation as a city, serving as president of that body. Altogether he was elected councilman for nine years and president of the council seven years; he was elected mayor in 1892; was a member of the Massachusetts house of representatives for three years, of the state senate two years, and a state prison inspector five years. He was president of the Malden Savings Bank for 37 years, and was for years a director in the First National Bank of Malden and the Freeman National Bank of Boston. He was a member of the First Baptist Society, Mt. Vernon Lodge of Masons, the Royal Arch Chapter of the Tabernacle, and the Malden Club.

In 1855 Mr. Pierce was married to Miss H. Louisa Hodgkins, of Charlestown, New Hampshire, and five children were born to them. Mrs. Pierce and two daughters survive. The funeral occurred at Malden on July 8.

Mr. Pierce was a warm friend of the late Hon. Elisha S. Converse, with whom he came into close contact in many relations of life during nearly half a century, and was one of those who formed the escort to the grave on the occasion of Mr. Converse's funeral, only a few weeks ago.

RUBBER PLANTING IN CEYLON AND THE MALAY STATES.

As Seen by The Editor of "The India Rubber World."

FIFTH LETTER.

Departure from Colombo for the Federated Malay States.—Christmas *En route*.—Arrival at Singapore.—The Botanic Gardens and Director Ridley.—Successful Growth of *Hevea*.—Gathering Gutta-jelutong in the Jungle.—Reboiling Gutta percha by the Chinese.—A Visit to Johore.—Starting for the Malay States.

MY second experience on a P. & O. boat was when I boarded the *Bengal* in Colombo harbor, being taken off in a catamaran, whose crew seemed to enjoy narrow escapes so much that they invited collision with every moving craft that came their way. Reference to my notes develops one fact that seemed of prime importance then, and that was that I sailed from Colombo on the 20th of December, and had received no mail at all while in Ceylon. In other words, I had got ahead of schedule time, and as a result was facing a Christmas on a tropical sea with no holiday greetings. However, the *Bengal* sailed just the same. We got away soon after dark during an exceedingly heavy rainfall. As there were only twelve passengers all told, I had a very roomy, four-berth cabin to myself—a great comfort in tropical waters.

The next morning I was up very early, took my last look at the fading shores of Ceylon, and got well acquainted with a young planter from Penang who was so much interested in India-rubber that he described to me in detail the way the American importers bought it, "melted it up with sulphur and lampblack and sold it to the manufacturers to be cast into goods." As we were still working south, the heat became even more tropical, yet we were forced to take much exercise to enjoy our meals. We therefore played ping pong, deck quoits, and cricket, being every now and then driven to the smoking room by the floods of water that poured along the decks, in spite of top and side awnings. The air was exceedingly damp, one perspired constantly, and, as one Briton expressed it, he felt like a chewed string. On December 24 we sighted the island of Puloh Wea, which, having no awnings over it, was getting mighty wet, and on the following morning, which was Christmas, we entered the harbor at Penang at 6.30 in the morning.

The rain had left us for a little, the sea was smooth, and all about us were brown-sailed Chinese junks and sampans with double pointed sterns, on which stood half naked dyaks with queer conical hats, sculling with exceeding skill. The harbor was crowded with foreign shipping, all gaily decorated with flags, and as we cast anchor we had a good view of the town nestling at the foot of lofty mountains covered with verdure to their very summits. We all got ready to go ashore and stood watching the swarming native boats containing money changers, curio sellers, and jugglers. These gentry were not supposed to come aboard, but whenever they got a chance they ran their boats close to the ship's side, climbed the slender masts, and, swinging toward the vessel, caught hold of the edge of a port, and clinging tooth and nail, came aboard like so

many monkeys. While we waited for permission to go ashore we learned that the huge two story building fronting us, but, alas, an eighth of a mile away, was the custom house, and the factory plant a long distance away with four brick chimneys was a tin smelter. We were also informed that the town was not Penang, but was Georgetown, Penang being the name of the island on which the town was situated, and then all at once, when we were full of information, the anchor came up and we sailed away. At first we were very much disgusted, but as we circled the island and struck into the straits of Malacca in plain sight of the low lying shores covered with graceful coconut palms, with ranges of mountains in the distance, and as island after island appeared in sight, each wilder and more beautiful than the last, we forgot our disappointment and became engrossed in the scenery. Possibly to make us more good natured, we had a magnificent Christmas pudding that night and then a musicale on deck, at which the first officer sang and the fourth officer played, and all joined in games until it was time to retire.

It grew rough in the night and the pagan who pretended to

look after my comfort slipped in and closed the port, which drove me on deck very early in the morning, to find the day lowery and dark, with a high wind blowing. Toward night, however, the clouds had scattered, all except a great black mass that lay over Sumatra way. As the sun dropped behind this mountain of cloud, and sent its rays through it, lighting the interior, we looked into huge golden caverns, their crimson ceilings upheld by twisted col-



JOHNSTON'S PIER, SINGAPORE.

umns and arches of fantastic design, while the light shining above the cloud mass flecked the sky to its furthest horizon with wonderful combinations of gold and purple that held one breathless with awe and delight.

After passing Malacca, which showed simply a white line close to the water's edge, so far away was it, many islets covered with palms, we sighted Singapore about 4 o'clock in the afternoon. As the tide was not right, we couldn't take the nearest channel, but were obliged to go outside of the strongly fortified islands that form natural breastworks for the fine harbor, and by putting on all steam, were able to get up to the P. & O. docks just as night fell. Those of us who were going to stop in Singapore went ashore at once, leaving our baggage to follow, and, in a square, box like gharri drawn by a little Burmese stallion, we drove by the Malay fishing village, around through the Kampong Glam to Raffles Hotel, said to be the *hotel de luxe* of the East. There we had dinner and later took rickshaws and rode through the Chinese, Malay, and Japanese quarters, watching with eager eyes the strange street scenes, listening to and trying to remember the grotesque calls of the street vendors, and finally seeing and hearing so much that was new and strange that it was a relief to get back to the quiet hotel and turn in on a bed that had neither top sheet nor coverlet, because in that



ORCHARD ROAD, SINGAPORE.

climate, even though the whole side of the room was open to the night air, no such covering is necessary. In the morning I had a new experience—a bath in Eastern fashion, for the bath room is a bit different from what the ordinary dweller in the temperate zone expects. It is cement floored and gullied, with a huge urn in it from which one dips buckets full of water to pour over the person. In other words, one stands outside of the tub to bathe. To get *into* it is out of the question.

And now a word about Singapore. It was founded, so the English say, in 1819, by Sir Stamford Raffles. The real date was, however, 1283, when it was founded by the Malays and became at once a general rendezvous for their pirate craft. It is 8000 miles from England, is the seat of government for the Federated Malay States, and is a great and growing business center. In the census of 1901 the population of the island was 184,554. Of this, 101,908 were Chinese, 35,000 Malays, 16,000 natives of India, and 2769 whites. The island contains 207 square miles and lies rather low, the land being on an average from twenty to thirty feet above sea level. The average mean temperature in the shade is from 80° to 85° F. The rainfall in Singapore and the Malay States is from 90 to 200 inches. The city is under excellent control, the buildings in the business portion are quite imposing, and the harbor, with its magnificent fortifications, most excellent. The visitor at once notes the strange mixture of races that place their impress on architecture, business, and modes of life. The naming of the streets is an example of this. For instance, there is Victoria street and Bukit Timah road, together with Orchard road and Teluk Blangah road, and so on.

After morning coffee, I took another ride through the crowded, barbaric, festering native quarters, and had my eyes opened to many things. The European and business parts of the city are really very fine, and, except in the heat of the day,

quite comfortable. It was not the rainy season, yet heavy showers came up almost every afternoon, and although it was cooler in the evening it was still hot and damp, and few of the hotel people showed much energy. Nor did they take any especial interest in the wants of their guests. No time tables were obtainable, nor was it possible to discover from the clerks anything about the departure of trains, the sailing of steamers, or the time when the postoffice would be open. They were not in the least discourteous, but simply weary and vacuous.

In spite of the midday scorching sun, in which all of my spare clothing was spread to kill the mildew, I took a rickshaw and rode out over Orchard road to the botanic gardens. I was most hospitably received by Director Henry N. Ridley, F.L.S., and shown all of the various rubber and gutta trees and vines that he has so industriously collected. The *Hevea* was naturally my first concern, and I found Mr. Ridley most willing to talk about it, as he has long advocated its very general planting, and certainly the soil is grand and the trees respond to cultivation beautifully. From 100 cultivated trees Mr. Ridley has taken 900 pounds of Pará rubber in one season's tapping. He has also taken 3 pounds from a three year old tree. The growth here is phenomenal, trees 18 months old standing 30 feet high, while three year olds often attain a height of 60 feet. I found in these gardens the *Hevea* growing in a variety of soils, and all apparently thrifty. For example, high up on a gravelly hillside, were a half hundred trees that were 8 or 10 years old, and 16 to 18 inches in diameter. These were planted in partial shade, but had outdistanced all surrounding growths. The other extreme from this was a large planting where there was but six inches of soil above water, the soil being often submerged but draining off very quickly. Here the trees grew well, but were apt to be blown over because of their shallow rooting. To show how tenacious of life the tree is, it is only necessary to examine the photographs of many such trees that, blown over, took fresh root from the tops and sent up shoots that soon developed into sturdy tree trunks. I counted seven such trunks springing from one prostrate stem, each trunk big enough to tap, and full of *latex*.



CHINESE DWELLING IN SINGAPORE.



FIELD OF PARA RUBBER ("HEVEA").
[In Singapore Botanic Gardens.]

Another experiment in distance planting was a row of 17 trees that were set 6 feet apart, that although they were only 8 years old, were 2 feet in diameter and showed a magnificent leaf area. These, of course, had the sun on both sides, and thus came along faster than if in partial shade. The number of *Hevea* trees in the gardens now ready for tapping is 1300. A still further experiment with the *Hevea* was the planting of the seed in specially prepared beds, in which a variety of different manures were placed. The photograph tells the whole story and would seem to point to cow dung as the best food for the young *Hevea*. The soil in the gardens is not particularly rich, being of a red gravelly character, showing traces of iron, but the moisture and the sunlight make up for what it may lack.

Next after the *Hevea* I wanted most to examine the tree that produces the Gutta-jelutong, or Pontianak gum. I found that it was very common all through the Federated Malay States, and that the gum was rarely taken from it, the tree being regarded as useful only for the cheap clogs that the natives wear. The tree is botanically the *Dyera costulata* and when mature is a splendid forest creation. One in the gardens, of which I have a photograph, was certainly 150 feet high, with a huge three part trunk, and a magnificent crown of leaves. We did not tap this one, but went into the jungle, found a wild one, and tapped it after the most approved method. The latex oozed out like clotted cream and seemed most abundant, but began to coagulate almost at once. It is said that a mature tree produces as much as 100 pounds, by scraping the bark rather than tapping, and mixing at once with kerosene.

In the bit of jungle where we found the Pontianak tree, there was killed only a few days before a 30 foot python, that had not been thought a particularly undesirable neighbor until he swallowed a couple of Mr. Ridley's swans, which ended his fate.

The *Castilloa* in the gardens did not seem to be in a very flourishing condition, nor did the Ceará rubber trees, although both have been carefully experimented with, the former seeming to be stunted, while the latter was apt to develop hollow stems. A further trouble with the *Castilloa* came about through its habit of shedding its temporary branches, which gives a nice sheltered tender spot for the beetles, of which they often avail themselves. There was also a most luxuriant growth of the *Willughbeia firma*, but it was such a tangle that it would be almost impossible to get any rubber out of it economically. Indeed, I have yet to find anyone that has experimented with the culture of the vines that are rubber producers who have any faith in them at all. The *Willughbeia*, however, when wild, produces a good grade of rubber that is known as "Borneo," and is very easily coagulated after tapping. There were also a great variety of Gutta-percha trees, together with the *Ficus* and the *Kickxia*, to which we devoted considerable attention.

Director Ridley is a most charming companion, and as he often takes long journeys into the wilds accompanied only by the wild men, his stories of adventure are very interesting. His guides in the wilds, by the way, never can understand his interest in insects or plants, except upon the hypothesis that he is after ingredients to make "gold water," a magic liquid that the white man is always yearning to make and which will turn anything into gold. The type of coolie in Malaysia is, however, far superior to that in Ceylon. They are better formed, stronger, and far more self respecting. Nor do they call the white man "master"; to them he is "tuan" (Sir).

There are many tigers in the Malay peninsula and some in the island of Singapore. In the bit of jungle where we secured the latex of the Gutta-jelutong there often lurked a tigress who swam over from the main land and had her nest there. As a rule they are troublesome only as they steal the Chinamen's pigs, and while there is now and then

one who gets to be a man eater, it is not European meat that they seek, but the flesh of the coolies. They are very clever



SHOOTS FROM A FALLEN HEVEA TRUNK.
[With view of Director H. N. Ridley.]



COAGULATING AND PRESSING PARA RUBBER.



MALAY HOUSE IN JOHORE.

and hide themselves so well that one may almost step on them in going through the jungle. Once they are discovered, however, they charge for the intruder, uttering a tremendous roar. If they are not wounded and the charge is avoided, they slip off into the jungle and are almost instantly lost to sight. There is a record of a large tigress with two cubs that terrorized twenty miles of well traveled road, killing on an average a coolie a day for months. She was finally killed by a spring gun, but the cubs escaped, but did not turn out to be man eaters. The tiger is fond also of killing the water buffalo. To do this they hunt in pairs, one cutting the creature out of the herd, while the other lies in wait, and at the right moment springs on its victim, seizing it by the neck, and, leaping high in the air, throws the whole weight of its body in such a way that the neck is instantly broken. Referring again to the man eaters, they kill their prey by a stroke on the neck, and in feeding eat only the coolie's legs.

The most vicious beast in Malaysia, and one that both Europeans and natives dread, is a bison, something like that of India, only larger. It is a huge animal, six feet high at the withers, short legged, and heavy bodied. It lives in the forests, feeds on fruits, and usually attacks man on sight. They are very hard to kill and are the dread of the foresters. It is easily the largest ox in the world, and by far the most dangerous.

There are of course many snakes, and of them the cobra seems to be best known. The Singapore cobra is a much more vicious appearing reptile than is its cousin of Ceylon, and with different habits. It is known as the black cobra and rarely bites, choosing rather to eject the poison at the eyes of its enemy, and at eight or ten feet distance it is a pretty fair shot. If the eye is not at once treated by some sort of alkali, or if the venom gets in an open wound, the results are quite serious. While I was at the botanic gardens, Mr. Ridley was treating the eyes of his fox terrier, who had just killed a cobra, and in the fight got his eyes full of poison.

Returning from the botanic gardens, I called upon Messrs. Huttach Brothers, to whom I had letters of introduction. They are large traders, sending shiploads of rattan from Singapore, and bringing great cargoes of coal from Japan. They are

also agents for tin mines in Johore, and incidentally handle much Gutta-percha. They were of the opinion that the Marconi system was already affecting the gutta market, as there was much in stock in Singapore, and according to their advices a great deal unsold in England. Through their courtesy I was taken to the Chinese merchant quarters and shown the reboiling process that prepares the gutta for the markets of Europe and America. We first visited the offices and storehouses of the Teck Wah Liong Co., where we met the senior member of the firm, a very polite, intelligent Celestial, who spoke good English. Our interview took place in a fine ante room furnished in Chinese fashion, with many sturdy ebony chairs set close to the walls, while huge lanterns hung from the ceiling. In the rear rooms were many brick tanks about 20x20 feet and 5 feet high, covered with cement, in which the gutta was stored under water. The floor was tiled and piled high with blocks and rolls of gutta, which, to keep off oxidization, was frequently wet down by turning a stream of water on it by means of a hose. Although they were equipped with reboiling tanks, none were then in use, so we were taken to a nearby warehouse where the work was in progress.

The Gutta-percha as the reboilers receive it comes in large crumbly cakes. These cakes are put in a tank and boiled in hot water, after which the mass is run through a large mangle turned by two coolies and fed by a third. It is next dumped into a tank of cold water, allowed to cool, and then stacked up to dry out. After drying it is cut into shreds by coolies who use great cleavers for the purpose, and it is again boiled and sheeted and cooled as before. This same process is gone through with a third time, but when the sheets come from the mangle this time the gutta is folded into neat rectangular blocks and is ready for market. This boiling, sheeting, and cooling, toughens the gutta appreciably and also allows of certain admixtures that are supposed to be suited to some grades. For example, in some of the lower grades a modicum of Pontianak is often introduced. All the gutta that I saw was said to have come from Borneo in small lots, though my informants told me that they received shipments occasionally from the Philippines.

I had heard so much of Johore and its young and athletic sultan that I had a desire to see it at close range. I was, there-



NEW MOHAMMEDAN MOSQUE, JOHORE.—VIEW FROM SEASIDE.

fore, much gratified by an invitation from the chief of the agricultural bureau there, Mr. F. H. M. Staples, to pay him a visit. I knew that I should miss the sultan, as rumor had it that he had taken \$200,000 in gold and started for Europe for a brief vacation from the cares of state. A brief rickshaw ride from the hotel took me to the Johore and Kranji railroad, where in the "first class waiting shed," as the sign on the wall had it, I waited for my train. When it appeared I got aboard and again waited. After a time the dusky hued station master came out and rang a big dinner bell most energetically, which was the signal to start. Still we waited and waited, but finally reluctantly pulled out. The ride across the island is short and pleasant, and is through many plantations and some jungle and terminates at a ferry where a steamer transfers the passengers to the domain of the sultan. Mr. Staples was awaiting me and was good enough to put me up at the Johore Club, and I had tiffin with him at the sultan's hotel. In the afternoon we drove out to the rubber plantation, which is some three miles from the town, and which now consists of some 50 acres of *Ficus elastica* quincunxed with Pará. As all the manure from the dairy farm is to be used on this plantation, the rubber should come on very rapidly. In addition to what is already planted, large clearings are being made, corn being first planted with the rubber for shade. On my return I had a look at the native village, went again over to the hotel and club, where I met the postmaster general, the chief electrician, and the Datto Abul Rahmin, admired some fine pictures of the sultan, and returned to Singapore.

Before I knew it I was facing the new year, and as New Year's day came on Friday, the rest of the week was taken by all as a period of rest. This suited me physically, for I was exceedingly languorous, but not mentally, as I longed to be up and doing. I gave up to the climate, however, and idled. Indeed, the wish to remain quiet grew on me to such an extent that had there been then more days of it I think I should have staid in Singapore. My bedroom boy, Poo Kee, a short, chunky, good humored Chinaman, made everything as easy as possible for me. When I ordered a bottle of Apollinaris he brought ink, and I never could get him out of the habit of starting the water running in the bathroom and leaving me to turn it off.

During my enforced idleness I did go down to the billiard room and play a few games, but more to hear the markers chant the score in Malay than for the fun of the game. To be sure I roused up one evening and went out to see some fifty rickshaw men try to thrash two Russian sailors who would not pay for their rides, but it was more like a game of tag than a fight.

On New Year's morning there were sampan races in the harbor, where the native

boatmen displayed surprising skill, and the spectators grew wildly enthusiastic in spite of the fact that it was exceedingly hot and the glare of the sun on the water was almost unbearable. The heavy rain that came up early in the afternoon, but lasted only an hour, did not discourage the merry-makers, and

as great crowds were going out to the race-track to see the natives compete with one another in a variety of sports, I went too. The turf around the track was sodden with water and the track heavy, but in spite of it all there were obstacle races, treacle dipping for silver coins, rickshaw, pony, and hurdle races that were both ludicrous and interesting. As on the evening before there had been a great dinner followed by a dance at the Raffles Hotel, and at midnight "Auld Lang Syne" and "God Save the King" had ushered in the New Year, I could not but feel that 1904 had been heartily welcomed.

In the meantime several warm invitations had come to me from planters up in the "States" to visit them and have a look at their rubber. I therefore decided to go up to Selangor, where as far as I could judge I was likely to see rubber that would typify what that part of the world could produce. Not that the oldest *Hevea* was there. Indeed some one told me, I do not remember whom, that the largest and oldest *Hevea* trees in the Federated Malay States were destroyed by mistake some years before. It seems that a former official ordered some Dyak servants to

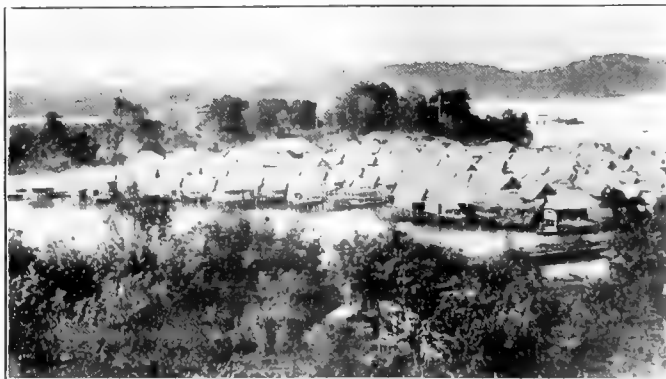
tap the trees and they, supposing that the flow of *latex* would be immediate and abundant, as it is with the *Ficus*, and finding the case the reverse, reported that the trees were barren. They were, therefore, cut down, much to the subsequent regret of all.

The boat that was to take me to Selangor is known as the *Sappho*, and in order to get aboard of her you order a gharri to be at the hotel at 3 o'clock in the afternoon and the man will come at 1 and try to charge you for the two hours' wait. He doesn't really expect to get the extra pay, however, and will respect you much more if you don't give it to him. He leaves you at Johnson's pier at about 3.15, where the coolie who takes your luggage in charge informs you that the launch to the *Sappho*, advertised to leave at 3.30, has gone. It is, therefore, your duty to engage a sampan, and get its owner to put you aboard. This is really more fun than it is to go in the launch, provided it is not raining. All this I did. Once aboard, I

found that the *Sappho* was a steamer of 329 net tons, and, according to the written statement of some dock official, had sufficient rice, fuel, and water for the voyage. I was, therefore, content. I had a very comfortable stateroom and soon made the acquaintance of two young English mining engineers who had come down to Singapore for the holidays, were going to get off at Malacca and then ride 50 miles on bicycles, mostly up-hill, to their station.



GUTTA-JELUTONG TREE.
[Botanic Gardens, Singapore.]



MALAY VILLAGE "PULO BRAM," SINGAPORE.
[The huts all on supports, over water.]

[TO BE CONTINUED.]

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

TAKING a retrospect over the last few years, there is comparatively little change observable either in the kind of chemicals or in the prices thereof. Certain oxides, like zinc oxide and litharge, have fluctuated in consonance with the market prices of the respective metals, but in many other chemicals the bottom prices obtained by competition have shown practically no variation; in this category come French chalk, barytes, whiting, carbonate of magnesia, sulphides of antimony and zinc and sulphur. In the case of red oxides of iron and lampblacks there has always been wide divergencies in price, according to quality, and it is more the tendency than it used to be to have these tested for their tinctorial power and to pay accordingly. I imagine that there is not much sale now for the heavy black of old time, which consisted largely of whiting, though would-be sellers of pure oxide of iron often complain of the difficulty they have in competing with oxides which look much the same and which by reason of a large admixture of foreign matters can be offered at a low price. Sulphur of good quality free from grit and acid is now selling at prices which do not admit of further reduction unless business is carried on on philanthropic lines. With regard to precipitated sulphur, the firm who supplied what little was used gave up the business because it was more bother than it was worth. Considerable fluctuations have been experienced in solvents; for a long time low prices ruled for 90 per cent. benzol and some manufacturers took to using this in place of the ordinary solvent naphtha. The main difference between them lies in the boiling point, and unless dough made with the coal tar benzol is kept covered more evaporation takes place than with the higher boiling naphtha. Coincident, however, with the decay of the waterproof branch came a demand for benzol for gas enrichment and these factors led to a reversal of the market prices, solvent naphtha during some periods of last year being sold as low as 5 pence per gallon. Naturally the decline in the demand for the latter has been a matter of great concern to the producers, the market for this product being a restricted one. There are only four or five producers of bisulphide of carbon, and since the retirement of the old established firm of Jesse Fisher & Son, three years ago, the price has gone up. Sulphide of zinc is a chemical which still has a restricted employment; its price being about three times that of the oxide, it needs no further explanation as to its undoubted merits failing to secure due recognition.

A LONDON contemporary has recently had some severe strictures upon rubber manufacturers who undertake contracts for goods according to specification and then lightly alter the mixings to suit their own convenience, ignoring the fact that the customer may have very particular reasons for wishing the specification to be rigidly adhered to. That conduct of this sort is reprehensible and inimical to the best interests of the trade can hardly be denied, but there is another side to the question which ought in fairness to receive consideration. This has reference to the fact that a particular brand of rubber may not be always procurable, and further than this, brands of rubber which are bought and sold in good faith under one name often vary a good deal in their resinous contents—quite enough to cause the chemist of the purchaser of the goods to become suspicious. It is

pointed out by our contemporary that testing of goods is much more commonly carried out at the present day than was the case a few years ago. There is nothing to be urged against this procedure except that as a good many of the analysts work entirely by published methods and have had no special acquaintance with the manufacture they are apt to think that rubber goods ought to yield figures as consistent as those obtained say in the case of metallurgical products. To arrive at correct deductions from the analytical figures obtained is by no means an easy matter, and it is readily conceivable that injustice may be done. This, however, is not the particular point I wished to emphasize. My main object was to point out that alteration in the rubber contents of a mixing may often be made as a matter of necessity and not at all for any nefarious purposes of gain. It is a question whether in cases of this sort it would not be advisable for the manufacturer to put the position clearly before his customer, taking of course the risk of the work turning out unsatisfactorily. At any rate this would clear him in the eyes of the customer from any intention to defraud and so prevent a rupture of amicable business relation. The fact that the natural resins of rubber are increased during vulcanization to an uncertain amount should be constantly before those who base the acceptance or rejection of goods on the alcoholic extraction test alone. Where the matter in dispute is merely concerned with an excess of mineral matter the analyst can of course express his opinion in precise terms and manufacturers who err in this way are in no way deserving of sympathy. Despite the great strides which the chemical analysis of rubber goods has made of late years, there still remains need to caution the analyst against hasty deductions if justice is to be done all round.

It is a moot point with many chemical and allied manufacturers whether or not to patent any new process they bring out.

CHEMICAL PATENTS. The publication of the details naturally gives the unscrupulous opportunity for surreptitious infringement; on the other hand, if a patent is not taken out there is always the danger of the process being given away by workmen. I was forcibly reminded of the complexity of the situation during a conversation with the discoverer of a chemical process closely connected with rubber. On my asking the patentee—for the process was duly patented—if he was not afraid of infringement he replied “Not at all,” because the published specification was purposely incomplete and misleading. “Any one,” he went on to say, “who attempts to work by its aid will not be able to effect the object in view.” Procedure of this sort it is conceivable may easily prove disadvantageous to the patentee in a court of law, but leaving this contingency aside there is undoubtedly a good deal to be said in favor of the retention of essential details. If the case resolved itself into one of actual misrepresentation or misstatement I am not sure that the patentee would not become amenable to the law, though I cannot point to any judicial utterance on the point. It is well known that Thomas Hancock worked his “pickle” as a secret process for many years until he was given away by a workman, and in the present age, when commercial morality seems, if anything, to be on the downward grade, there is so much chance of a workman being “got at” that the risk attending the working of a secret process is one that needs careful consideration. It is no use

PRICES OF
RUBBER
CHEMICALS.

A PLEA FOR
CAUTION.

trying to lay down any hard and fast rule on the matter; each inventor must decide for himself as to the best course to pursue; but where a chemical process is carried out in part by different men who are not in direct communication with one another and where moreover there is good reason to believe in their trustworthiness, substantial reasons seem to exist why the aid of the Patent office should not be evoked.

THOUGH no doubt the majority of people are exultant at the continued sunshine we are enjoying this summer in contradistinction to the prevailing conditions of the last two years, the fact forms a source of jeremiads on the part of many rubber manufacturers. No one is particularly keen to buy waterproofs, while with regard to garden hose the hot weather seems to have come somewhat too late. If people do not purchase in May they think they can get along till next season. The people who can have nothing to complain of are those interested in the sale of lawn tennis balls. The game is going stronger than ever, and the number of tournaments shows its increase. I understand that six gross of balls were used at the All England tournament at Wimbledon, these being supplied by Messrs. Slazenger, who in this respect still hold the position from which they ousted Messrs. Ayres two years ago. The fact that the Doherty Brothers, who took the Davis Challenge cup from America last year, are on the board of Messrs. Slazenger, Limited, is not without significance. There is a slight difference between the Ayres and Slazenger balls, and as the leading players like to stick to one brand, it follows that the bulk of the tournament business of a season goes to one firm.

THERE is nothing surprising in the fact that a rubber trust has been formed in Austria, at least to those who have followed the progress of Teutonic industry. Over production is always followed by a combination of manufacturers in Germany and Austria—a fact which has had a very great deal to do with the dividends paid by various branches of the chemical manufacture. This is generally overlooked by our education enthusiasts who are never weary of pointing to German education and industry as the main cause of their preëminence in the chemical trades. Not that I wish to pose as an antagonist of the *kartel*; in a great many cases it is the only way out of intermarine competition. I merely wish to point out that the technical-education people are often ignorant of a good many important facts connected with a fair comparison of home and foreign industries. As some of the Austrian rubber firms have branch houses in London, English firms will of course watch with interest the new state of affairs in the dual monarchy.

I AM not here going into a medical matter, but the report of an expert committee appointed by the Home office to enquire into the increased mortality among Cornish miners has a remote bearing on the rubber industry. It is recommended that the dangerous dust from the rock drills be rendered innocuous by a water spray, and to put this recommendation into practise the use of rubber hose must be resorted to. It is suggested that the water shall be taken along the levels by iron pipes and taken to the jets by armored rubber hose of narrow base. As there is little doubt that regulations enforcing the use of water jets with rock drills both in England and the Transvaal will shortly be issued, there should be a considerable demand for the necessary rubber tubing, and those makes which are best calculated to withstand the rough usage they must expect will naturally be in the greatest demand. So far the electric rock drill has not made much progress in metal mining, and the prospect of dry mines being pretty generally converted into wet ones is not in favor of their further adoption.

The laying of cables in wet mines is a somewhat risky proceeding, because even with the lead covered cables there is constant danger of corrosion from the presence of acids in the water.

WITH the remarks on scrap rubber in the July issue of THE INDIA RUBBER WORLD, I am quite in accordance. Slackness in trade in the articles into which scrap enters certainly accounts for a decreased demand and there is also the increased amount put on the market by collectors. All sorts of old rubber articles which formerly went on the waste heap are now carefully put on one side to await a dealer's offer, and the rubber manufacturers say that scrap sellers are multiplying to an undue extent. Of course the term "scrap" is a wide one and while some brands have a ready sale there is a good deal of stuff which the dealer finds it very difficult to get rid of, and it is open to doubt whether storing it up for better times is the best policy to pursue.

It is to be hoped that the "safety" vapor and shower bath illustrated in the last issue of THE INDIA RUBBER WORLD is really what is implied by the title. There have been some fatal cases in England in connection with the cheap Turkish bath at home, and in the case of a recent inquest the inventors or sellers were severely reprimanded; indeed the question of prosecution for manslaughter was raised. I don't profess to have mastered the details of the apparatus, but I think the use of spirit lamps by women in such a connection ought to be discouraged.

IN an article on Gutta-percha reprinted in our London contemporary the two following passages occur: "Jelutong is extensively used in American industry, especially for manufacturing toys," and later on: "Increasingly large quantities of Jelutong go to America. It would be worth while for manufacturers in the United Kingdom to try and ascertain in what special directions it is used there so extensively." Not to comment on the fact that the author has previously answered to a great extent his own query there are many who would like to know if the toys referred to are rubber toys. Surely it is not to this use that the bulk of the Jelutong, or Pontianak, as it is best known in England, is put.

A NEW motor tire combining, it is claimed, all the properties and virtues which the ideal article should possess, will shortly be before the public. The prospectus of the new company, called the Securitas Motor Tyre Co., has been in private circulation. The capital is to be £50,000, of which £29,000 is offered for subscription. Evidently some flaw has been detected in the specification, as we are told that this is to be amended on the advice of Mr. Bousfield, K. C. The upkeep of a set of the new tires is to not exceed £3 to £15 per annum against (it is said) £50 to £100 in the case of other makes.

IN the person of Mr. Thorp, late general manager of the Continental Caoutchouc and Gutta-percha Co. of Hanover, the rubber trade has recently lost by death a prominent man. From occupying in early life quite subordinate positions in the works of Messrs. Charles Macintosh & Co., Limited, he rose in the course of a few years to the managerial position just mentioned, which carried with it a salary running into four figures, and retiring therefrom a few years ago on a pension.

THE desire of the big cable firms on the Thames to become free of the restrictions of the London County Council has been mentioned before. Henley's Telegraph Co. are about to build extensive premises at Northfleet, while the new works of Messrs. Siemens Bros. & Co. are situated at Stafford, though this is not a case of entire removal, the old works on Thames side being still in full use.

WEATHER
AND THE
TRADE.

THE
AUSTRIAN
KARTEL.

MINERS'
PHTHISIS.

RUBBER
SCRAP.

DANGEROUS
GOODS.

JELUTONG.

NEW TIRE
COMPANY.

OBITUARY.

NEW
PREMISES.

MANUFACTURE OF FRUIT JAR RINGS.

BY J. W. C.

THE production of fruit jar rings has assumed such proportions as to make it an important branch of the rubber industry. Methods of production and packing of the goods made have, in the presence of ever growing competition among manufacturers, undergone great improvement within the past few years.

A jar ring is not difficult to make, but, like every other thing in the rubber line, it has to be made "just so." The compounded stock is generally run through the tubing machine to a slightly larger outside diameter than is required, it being necessary to offset the reduction in size that results when the material is wrapped for curing. As the stock is run from the tubing machine in the form of a cylinder or tube, it is cut off in lengths of, say, 30 inches. These are immediately placed upon iron or steel tubes 8 or 10 inches longer than the length of stock. The outside diameter of the steel tube being that of the inside diameter of the intended jar ring, the cylinder of stock is tightly bound to the steel tube by means of wet cloths.

The workman first places a ring or washer on either end of the tube and against the ends of the cylinder of gum, to prevent its lengthening under pressure. These washers are held in place by means of a sheet of muslin called a "jacket," which is spread on by hand while wet, completely covering the cylinder and going $1\frac{1}{2}$ times around it. To accomplish this successfully the tube is placed horizontally upon a table and adjusted to small rollers or wheels at either end, which are made to revolve at a high rate of speed. Upon this "jacket" is then smoothly wound a strip of muslin long enough to make two thicknesses of wrappings. This is also applied wet, the workman exerting his strength so that the wrapper be tight as well as smooth. The cylinder is then ready for vulcanizing.

A tubing machine running a jar ring stock, should turn out from 5000 to 6000 pounds in ten hours. To produce and handle this quantity will require the labor of three men at the tubing machine and four men at jacketing and wrapping. Six thousand pounds of an average weight white Mason jar ring, and 5000 pounds black, represent a fair day's work, and would make, approximately, 1000 tubes.

The cylinders as above prepared are placed on the carriage of an open steam vulcanizer, and receive a cure of 30 minutes at 50 pounds pressure, more or less, according to requirements. Wrappers and jackets are quickly removed and the cured cylinder is ready for the cutting machines. There are several styles of these machines, but the principle in all is the same: To slice or cut the gum cylinder into jar rings of a specified thickness, at a high rate of speed. Compressed air, admitted to the interior of the cylinder, expands it sufficiently to admit of its being quickly thrust upon a mandrel. This mandrel is adjusted to the cutting machine, where it is made to revolve rapidly. The cutting is done by a sharpened steel blade securely fastened to a traveling carriage and which receives its cutting stroke from a cam. Such a machine will cut from 350 to 500 pounds in ten hours. Workmen should be charged with value of rings spoiled by a dull or wrongly adjusted cutting blade, or other neglect. Waste from cutting and imperfections in stock should not exceed an average of 2 per cent.

The cut rings are stripped from mandrels, compressed air or some simple form of machine being used. These rings are spread upon tables where they are inspected, counted, tied in bunches, and packed. Rings are counted out in lots of a dozen, which is a convenient form for tying in bunches, or placing loose in fancy boxes holding a dozen rings or in cartons holding

1 gross. Large canneries and other concerns order jar rings shipped in bulk in barrels for their particular use, but the public has become fastidious and must now have a smooth, shapely ring, of a certain color, and packed in a handsome box. All jar rings are not run on the tubing machine, the expensive fine red rings being built up into cylinders by means of the hand roller. The cutting also is more successfully done by hand on slow speed lathes, rather than by the automatic machines.

An important item in the successful cutting of jar rings is the cover for the mandrels. These mandrels are made of brass tubing, which must be covered with some suitable material into which the point of the cutting blade may strike when it passes through the gum cylinder, without injury to the knife or the rings cut. This covering is generally of a cheap grade of compound, and it is the practice in some factories to hand roll it onto the mandrel, and then wrap and cure in the usual way, after which it is dressed down to size on a hand lathe. A good deal of this process, besides being expensive, is unnecessary. The layer of stock on a mandrel becomes so badly cut up in two or three days' use on a ring cutting machine as to render the recovering of the mandrel a necessity. Cover it with a good tough stock, sheeted very thin on calender, and built up to exact diameter required by means of hand roller. The mandrel is then ready for use. The uncured stock will stand more punishment than when cured, and when worn out can be stripped from the mandrel, sent to mill room, softened, again sheeted on calender, and used on mandrels again and again.

By the first named method the labor cost is much greater, and the loss in cured stock fully 90 per cent. By the second method about 90 per cent. of the stock is saved for continued use. I know of one large factory that saved \$100 per month by this change in methods. Some factories experience trouble, in that stock used for white jar rings comes "blowed" or full of small pores. Its possible cause is moisture still remaining in some of the compounded ingredients. This can be overcome by "scalding"—i. e., working the stock over for 30 minutes or more on a very hot mill.

The vacuum jar ring differs from the flat jar ring in that it is run from the tubing machine in the form of a small, round cord. An expensive stock of a light red color is generally used. The work on the tubing machine requires great care and skill to keep the cord to an exact gage. It is therefore frequently weighed and calipered during this operation. As fast as run from the machine it is wound on zinc covered drums, and until the surface of the drum is covered with one layer. A diagonal cut is then made through this layer, permitting of its being spread upon a tray. At the work table it is again cut, this time into lengths corresponding to the diameter of the rings to be made. The diagonal cut is preferable, as it admits of each piece being formed into a ring with a splice joint. The work of splicing is done by hand, girls being employed. It requires great skill to handle the stock without stretching and do splicing neatly. Large covered pans are used in curing, the rings being covered with talc. A bath in glycerine brings out the bright color of the stock. Tied in bunches of 1 gross, the rings are then ready for shipment.

RUBBER GOODS IN AUSTRALIA.—A correspondent of the *Ironmonger*, the representative British hardware journal, reports on the origin of the stocks of hardware found in a leading store in Melbourne, Australia, his letter including the following items: Wringers, with India-rubber rollers, American makes; India-rubber hose pipes, North British Rubber Co., Limited, and some American cotton covered.

FUTURE PRODUCTION OF RUBBER IN AFRICA.

By Gustave van den Kerckhove (Brussels).

FOR the last five years the output of rubber from Central Africa has been large, and imports from that source to the European markets have been on the increase. This prosperous state of affairs, as far as rubber is concerned, has been due to the great exploration work undertaken by the Belgian and some French trading companies in the "dark continent." While the production was increasing, the consumers of rubber, and especially the American manufacturers, wanted more and more. The trading companies were thus in the enviable position of being able to produce good quantities of rubber and to obtain, as a rule, fair prices. But apparently a turning point has now been reached, some reasons for which I shall endeavor to point out.

The output of rubber has been large, as I have said, in Central Africa; that from the West and East coasts is not larger than two or three years ago. In fact, rubber exports from the English colonies of West Africa have been failing rather fast. Lagos, Sierra Leone, and the Gold Coast are now very small exporters compared with their former production. In Lagos, formerly some 2000 tons of rubber were gathered yearly from the *Kickxia* tree, whereas this tree is now very rare in that colony. In Sierra Leone the imposition of the hut tax had the effect of driving rubber collectors and the native merchants to Conakry (French Guinea) to sell their produce. As for the Gold Coast, mining now offers more attractions to investors than the collection of rubber. The Portuguese colonies in Africa have also declined as rubber producers.

Without doubt the interest of the future in the rubber output of Africa relates to Central Africa—to the Soudan, to the French Congo, and to the Congo Free State, which countries we may here consider in the order named.

SOUDAN.

To have a fair idea of the rubber production of this vast portion of Africa, we should examine the progress made by Conakry as a rubber trading center, as most of the rubber produced in the Soudan finds its way to Europe through Conakry. Also, have a look at the new European rubber market, Bordeaux, which has almost monopolized the trade in French Guinea and Soudan sorts. These figures are of interest:

YEAR.	Conakry Exports.	Bordeaux Imports.
1897.....	1,225 tons	52 tons
1898.....	1,888 "	89 "
1899.....	1,399 "	175.5 "
1900.....	1,464 "	239.5 "
1901.....	1,039 "	235 "
1902.....	1,155 "	678 "
1903.....	1,468 "	1,113 "

As will be seen from the above figures, there was about 1901 a falling off in the exports from Conakry, but this was the result of some restrictive laws to regulate the gathering of rubber. The imports at Bordeaux, however, have shown a steady gain, the bulk of the arrivals there being from Soudan, the exceptions being principally from Casamance, the Ivory Coast, and French Congo.

It is well known that the French authorities have established restrictive laws regulating the tapping of rubber trees and coagulation of the *latex*. These have given good results as far as quality is concerned, the natives taking good care not to offer for sale any foul rubber. The opening of some large tracts of land in the French Upper Niger, which forms a portion of the

Soudan, will bring to the coast in the near future some new rubber. In the Foutah-Djallon district there are immense lands on which 50 per cent. of the vegetation is reported to be rubber trees and vines, of which hardly 10 per cent. have been tapped. Already considerable plantations of rubber, both trees and vines, have been established there.

The lately completed railway from Conakry to the interior will facilitate the trading of French firms and companies in certain parts of the Upper Niger, which will contribute a new impulse to the rubber trade. On the whole, the future of the Soudan rubber trade is hopeful, but it would be a great mistake to conclude that this part of Africa is going to become all of a sudden a large exporter of rubber. The exports may be expected to increase gradually, but very slowly.

FRENCH CONGO.

SINCE the adoption of the policy of granting large concessions by the French government, more than forty French companies have been formed, with the principal object of gathering rubber in this part of Africa, but very few have met with success. Perhaps six or seven companies have become regular exporters of French Congo rubber. Some of these companies—for instance the Upper Ogooué Co., the Upper Oubanghi Sultanats Co., and the Upper Sangha—have done good work, every year increasing their production. Several other companies have even abandoned their concessions.

There is not the slightest doubt that the French Congo is very rich in rubber trees and vines. Then why is it that only half a dozen firms seem to go ahead? The answer is simple enough: Want of fresh capital, want of labor, and want of means of transport. The rubber export statistics for the French Congo are as follows:

1902.	1903.
688 tons.	842 tons.

—showing an increase of about 154 tons.

Up to the present date the rubber areas of three large basins are known and have been explored—namely, the Ogooué, the Oubanghi, and the Sangha. Of course, other parts of the French Congo have been explored, but results with regard to rubber have not been very encouraging. There is talk again of the eventual building of a railway connecting Loango, on the coast, with Brazzaville, on the Congo, at Stanley Pool. If this project should be carried through, general trade would certainly benefit by it. As in the case of the Soudan, a rapid increase in rubber production must not be expected in the French Soudan, though the exports will very likely show, for the coming years, a gradual increase of a few hundred tons.

CONGO FREE STATE.

Now I come to the great supplier of African sorts. The increasing output of rubber from the Congo Free State for several years astonished not only the rubber trade, but the world. The phrase used at the beginning of this article regarding a turning point having been reached, referred to the future production of the Congo Free State.

After some six or seven years of prosperity, the authorities of the Free State, having given full confidence to the capital invested in the colony, have reached the conclusion that the time has come to put in full force the laws regulating the gathering of rubber. These wise regulations relate especially to the pro-

tection of rubber vines and trees, and to replanting. Forest inspectors and comptrollers travel from one point of the country to another, imposing penalties for the slightest neglect of the regulations. The result has been that in many cases traders have to give more attention to the replanting than to the collection of rubber.

In 1899 a decree was published, stipulating that 150 young vines should be planted for each ton of rubber exported. In 1900 this decree was modified, so that every ton of rubber leaving the Congo Free State represents 500 new vines planted. The officials have established about 125 gardens (*jardins d'essais*) for this purpose, employing more than 7000 workmen.

These replanting regulations appear to have given good results, and actually millions of young planted *Landolphia* vines can be seen growing in the Congo Free State. Roughly estimated, about 25,000,000 hectares afford good soil for the growing of the *Landolphia* vine. To give an idea of the importance of the replanting regulations, it is perhaps interesting to mention that a single company, trading in the Equateur district, has actually more than 10,000,000 young planted vines.

A very important question is at what age does a *Landolphia* vine yield *latex*, and what amount of rubber can be expected from a vine? The productive age of *Landolphia* may be put at five to six years; earlier tapping of the plant means risk to kill it. At this age the vine should give of about 6 to 7 ounces of *latex*, which means 4 to 5 ounces of dry rubber. By the crushing method for collecting the milk a vine of the above age should give about 3 ounces more *latex*, but in that case the plant, but not the root, is killed. The root being saved gives a new vine, which this time gives 6 to 7 ounces of *latex* in less than four years.

For the present, and perhaps for four or five years to come, these replanting regulations will cause a decrease in the rubber output of the Congo Free State. Here are some instances of the decrease which is already very apparent: Three of the most important companies trading in the Congo, including the company producing the well known Lopori rubber, have received together during the first six months of 1904 about 639 tons, which means a great decrease compared with the arrivals of the first six months of the previous year. The total decrease for 1904 for these three companies may be estimated at 50 per cent. The other trading concerns have not produced more rubber than in 1903. The "Kasai Syndicate" for the past six months has sent home about 460 tons. This is satisfactory, in a way, but the expectation was about 1400 to 1600 tons yearly.

Is this situation going to last, and is there to be a further decrease? In my opinion there will be a further decrease, and the general output of the Congo Free State for a few years will be smaller, until plantations now under way begin to yield.

CONCLUSION.

GENERALLY speaking, the West and East coasts of Africa do not actually produce more rubber than last year, and there are no prospects and no reasons for an increase; in fact, a decrease is more probable. The Soudan and the French Congo may slightly increase their exports, but these will not compensate the expected later decrease in the Congo Free State. Therefore, a decrease in the general output of rubber from Africa for the next four or five years, at least, appears probable.

* * *

EDITORIAL NOTE.—For further information and suggestions bearing upon this subject, see "French Soudan as a Source of Rubber," in this Journal, November 1, 1901—page 39; "Rubber Production in the Congo River Country," December 1, 1901—page 83; "How Rubber Comes from the Congo," May 1, 1903—page 267.

RUBBER GATHERING IN RHODESIA.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Some time ago I promised to write you in regard to rubber in this country and started a letter on the subject, but after reading an article headed "Rubber Resources of Rhodesia" in your issue of September 1, 1903, I decided to make a further investigation, as many of the statements therein set forth did not appear to me to be correct. I have waited, therefore, to see samples of rubber taken, in order that there could be no mistake in regard to them.

I will start with *Landolphia florida*, the common vine yielding *latex*, and I send you three samples of rubber from this plant, marked Nos. 1, 2, and 3. No. 1 was taken from a vine 6 inches in diameter and about 200 feet in length, including tendrils or small branches, by which it hangs onto the forest trees and undergrowth. No. 2 is from a vine 2 inches in diameter. No. 3 is from the root of the vine, after the vine has been killed by tapping. The vine bears a red fruit, shaped like a plum, and of a sweetish but peppery taste, of which the natives, and also birds and monkeys, are very fond.

Nos. 1 and 2 are both obtained from the vine in the same way. The natives have many ways of extracting rubber, always adopting that which appears the easiest in any given case. One of the most usual methods is to hack the vine with an axe from as high as he can reach to the ground. Then sitting down at the foot of the vine he clears away the loose dirt and leaves and allows the *latex* to drop or run as it pleases, and from time to time, between a smoke and sleep, he gathers up the *latex* and rolls it into balls, large or small, as the fancy takes him. For ease in returning to his camp, he sticks the balls one to the other as in No. 2, and with his string of rubber on one shoulder and his axe on the other, he goes to his village, his arms being free to follow the movement of his legs at their leisure. Another way of procuring the *latex* is to climb the forest tree and cut the tendrils of the vine by which it hangs and then, having got the vine on the ground, hack it all over with the axe and let the sap flow. As it runs from the vine it is smeared on the body, and when partly congealed rolled into balls, but only smooth skinned natives can do this.

No. 3 is made of *latex* obtained from the root after the vine has been cut away, and I have heard it described by some people as the "root rubber" plant, but it is not. I have never seen a root rubber plant. The roots of the vine, after the vine has been cut away, throw out suckers like most other trees and vines do here when cut down and the roots left. They send up a number of suckers which rise to about 2 feet, and if allowed to grow would no doubt form a larger and stronger vine than the original growth, but with game feeding on them and the veldt fires burning them off every year, they seldom reach more than 2 or 3 feet in height. The roots having no outlet above ground, develop large and long roots and throw up suckers along the joints of the root. The rubber from the root is obtained as follows: The root is dug up and cut into short lengths of from 5 to 6 inches and is then pounded in a wooden mortar; it is then put into hot water and the bark and wood removed, and the sticky mass remaining is made into cakes or balls, as No. 3.

The other two samples, Nos. 4 and 5, are from the vine *Landolphia Kirkii*. The difference between this and *Landolphia florida* is that it bears no edible fruit and that game do not feed on its leaves, but in appearance the two plants are much alike. Sample No. 4 was extracted by cutting the vine into lengths of from 1 to 2 feet, smearing the *latex* on the body and then rolling it into small balls as it congealed. No. 5 was obtained by sticking the point of the axe into the vine and making cuts about

$\frac{1}{2}$ inch long and about 2 or 3 inches apart, from the root up the vine as far as the men could reach, and as the *latex* oozed out and congealed it was picked off and made into small balls, as sample No. 5, and the balls stuck together for ease in carrying.

I only know of three kinds of trees in this country giving a sap which is elastic, but have never heard of any commercial value having been attached to the *latex* from them. It is used by the natives for trapping birds. The names of the trees are "Kuckchie," which bears a fruit like a small wild fig, largely devoured by natives and pigs; "Mtoe" or "Tomboze," a tree of extra large growth, bearing a bean filled with white milk which, when boiled, is not unlike in appearance well kneaded dough, not sticky and very elastic; and "Mkuze," the same as "Mtoe" but bearing no bean and having a white flower.

JAMES HIGHFIELD.

Fort Jameson, Rhodesia, March 19, 1904.

EDITORIAL NOTE.—From a physical examination of the sam-
ples sent by our correspondent, Nos. 1, 2, and 3 appear very much
like unripe Mozambique, and should bring, at the present state
of the market, 75 to 85 cents a pound, Nos. 1 and 2 being bet-
ter than No. 3. Samples Nos. 4 and 5 are very similar to black
Kasai, and would bring about 95 cents a pound unless, in
working, the rubber should soften up.

Mr. Highfield writes from a region westward from the lower
end of Lake Nyasa, and from British Central Africa, the rubber
production from which territory has well nigh ceased.

Rhodesia is an extensive region, and his district is some dis-
tance removed from those referred to in the article he men-
tions in our issue of September 1, 1903. This fact may serve
to explain apparent differences between Mr. Highfield's obser-
vations and those noted in our former issue. By the way, is
Mr. Highfield certain that the *Landolphia* species he mentions
is *florida*?

STATE OF THE GUTTA-PERCHA TRADE.

FROM "THE STRAITS TIMES" (SINGAPORE), JUNE 9.

THE announcement that a new cable is to be laid, connect-
ing the Pelews Celebes, the Philippines, and Shanghai—
apart from its general commercial and political significance—
is of considerable local importance, as being calculated to give
an upward tone to the somewhat depressed gutta market.
Though the prices of gutta to-day are much better than they
were ten years ago, the market is nevertheless stagnant at the
present time, and that stagnation is due to two causes. The
first of these is the reaction subsequent on the completion of
the All British cable, and that reaction the new Holland-Ger-
many project will tend to stem. The other is the distrust that
has been awakened in the purchasing markets of the West, with
regard to the quality of gutta exported from Pontianak and
Singapore.

This gutta—as is well known to those interested—has been
largely adulterated of late years with a product imported hither
from Brazil [Evidently Balata is meant.—EDITOR THE INDIA
RUBBER WORLD.] for the sole purpose of adulterating gutta.
It is an adulterant of a superior order, and cannot be detected
until the gum is put into manufacture, when the flaw shows
itself, and the gutta is condemned. Meanwhile, large fortunes
are being made by those local and Pontianak traders who make
judicious use of this interesting South American adulterating
material.

The practice, however, seems to have been carried too far in
some instances, and THE INDIA RUBBER WORLD and other
trade journals have been complaining, with the result that a

big stock of the gum—good and bad—has accumulated here;
and, owing to bad prices, the river traders in Borneo, Sarawak,
and elsewhere are also holding their stocks for a better market.
The projected new telegraph line will require about 2500 miles
of cable; and for this vast length, a large amount of gutta will
be necessary.

Whether the demand thus created will be sufficient to en-
tirely relieve the local congestion, is of course a matter for
time to determine; but the sale of impure gutta as pure gutta
by exporters in this part of the world has so injured the repu-
tation of the article, that the purchasers will not seek the
Straits with the same confidence as formerly. Systematic
cheating on the part of the collector, the river trader, and the
exporter proper has too seriously hurt the trade to admit its
being able to recover itself at moment's notice, no matter how
fair the opportunity.

EDITORIAL NOTE.—The above assertions regarding the fall-
ing off in the Gutta-percha trade are supported by the customs
returns of Great Britain, by which it appears that the imports
of Gutta-percha for the first six months of three years past
have been as follows:

	1901.	1902.	1903.
Pounds.....	5,740,532	2,758,672	1,287,440

All the above quantities are not credited to Singapore, for
British returns of Gutta-percha embrace also Balata. Which
fact is of interest in connection with another statement copied
above from *The Straits Times*—that Gutta-percha is now being
adulterated at Singapore with a South American gum. We
find that England has exported "Gutta-percha" to Singapore
as follows, and it is credible that the material referred to is
Balata, for use as claimed in our Singapore contemporary:

BRITISH EXPORTS OF GUTTA PERCHA TO SINGAPORE.

1897.....	pounds 2,800	1900.....	pounds 24,304
1898.....	11,872	1901.....	86,800
1899.....	15,904	1902.....	80,528

"CAMETA" RUBBER OF BRAZIL.

BY LOUIS H. AYMÉ, UNITED STATES CONSUL.

THE India-rubber production of the Amazon valley presents
a problem of the very greatest interest. Much is known
to-day about the *Hevea* tree, its *latex*, the methods of collection
and coagulation of the *latex*, and the subsequent handling of
the rubber, but doubtless much more is still to be learned. It
is very difficult to obtain any information from the Indians ex-
cept concerning the regular routine work. The Indian can not,
or at least does not, make generalizations, and does not note
the causes of the phenomena he scarcely observes. Many of
the data for the solution of the problem are therefore still
lacking.

In the special grade of rubber known as "Cametá" I think
an important indication leading to a solution of the rubber
problem may be found. Cametá rubber is a special grade of
entrefino or *sernamby* rubber—chiefly the latter. I am informed
that small quantities of Cametá are beginning to come from
some of the older districts that were exploited after the Tocan-
tins, as the trade increased. This would seem to indicate the
probable duration, under present conditions, of the production
of fine rubber from any given field as from 20 to 30 years at the
most.

Cametá rubber is merely self-coagulated *latex*; at least such
is the opinion of a very intelligent rubber collector. He said
that even to-day there is much carelessness in tapping the trees
to get the "milk." In the early days this carelessness was
greater still. The constant wounding of the bark causes the

trunk of the tree to swell very greatly, a tree that has been much tapped assuming bottle form, tripling and quadrupling its diameter. As the tapping goes on scar is inflicted on scar and there comes a time when the milk no longer flows, but merely trickles or oozes out. Then it is no longer practicable to collect the milk from the hundreds of small cups into a single receptacle, and it is allowed to slowly ooze and coagulate in the cups. The result is Cametá rubber; or, as my informant put it: "Cametá rubber is the kind of rubber you get from old, tired out trees."

It is this man's belief that if those same trees were allowed to remain quiet for some years they would recover much of their former productiveness, except where they have been injured beyond remedy. He believes that if trees are carefully tapped, so that the minimum of injury is inflicted, and are not too heavily drawn on, they will continue to give practically the same amount of *latex* annually for an indefinite time.

If it should be found hereafter that districts which now yield both fine and coarse rubber come to yield only Cametá, a positive factor in the determination of the probable future of rubber production would be attained. The whole question is of great interest and should be studied.

Pará, Brazil, June 7, 1904.

* * *

EDITORIAL NOTE.—The above suggestions appear quite compatible with the following reference to "Cametá rubber" in Mr. Pearson's "Crude Rubber and Compounding Ingredients:"

Cametá rubber is so called from the port of that name, on the Tocantins river. It is noted for the superior quality of its "sernamby" grade, the "fine" being the same as from the Islands, but rarely seen. This rubber comes in the form of little cups pressed into large "negro-heads."

At times the quotations for Cametá coarse rubber have been materially higher than for Islands coarse, though never equal to Upriver. Of late, however, Cametá and Islands coarse have been quoted frequently at the same figures. During the past three years Cametá rubber has averaged 2 cents per pound more than Islands coarse at New York.

AMAZON CABLE INTERRUPTIONS.

A NNOUNCEMENT was made on July 20 of the interruption of the cable service between Pará and Manáos, above Itacoatiara. Such interruptions are so frequent as no longer to possess any novelty, and the service is so irregular as to rob the cable of half its value to commerce on the Amazon. The Amazon Telegraph Co., Limited, though put to heavy expense for several years past in keeping their cable in repair, may not be aware of the cause of the interruptions, as explained to THE INDIA RUBBER WORLD by Captain Arthur Schindelar, a gentleman of long residence and wide observation on the Amazon. According to this authority it is desirable, in the manipulation of rubber prices by the speculative merchants at Pará, to keep buyers of rubber ignorant, as far as possible, of conditions upriver. Hence, whenever prices are to be moved up a few points, the Amazon cable is cut, and deceptive reports are distributed regarding a shortage of stocks at Manáos. This gentleman does not claim to have seen personally any cutting of the cable. Captain Schindelar, by the way, is now visiting the United States for the purpose of interesting capital in a plan for controlling the rubber trade of the Amazon.

SEND for a free copy of the Index to "Crude Rubber and Compounding Ingredients", by Henry C. Pearson and published by THE INDIA RUBBER WORLD.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED JUNE 7, 1904.

- N**O. 761,643. Hose coupling. A. Backmann, Virginia, Minn.
 761,777. Pneumatic tire [single tube; tread reinforced with asbestos cloth]. C. W. Maxon, West Bay City, assignor of two-thirds to S. A. Bush, South Arm, and W. L. French, East Jordan—all in Michigan.
 761,847. Tire [composed of a circular casing and a plurality of segmental members located inside]. J. Millar, assignor of one half to H. Willoughby, Jr., both of Kearney, N. J.
 761,879. Fire and waterproof flexible tubing. G. M. Costello, Philadelphia.
 761,890. Process of making rubber bag bodies. I. F. Kepler, Akron, Ohio, assignor to The B. F. Goodrich Co.
 761,950. Hose coupling. L. Dreifuss, Danville, Pa.
 761,989. Pneumatic horse collar. W. Ost, Newark, N. J.
 762,017. Swimming glove. C. G. Ammon, Pittsburgh, Pa.
 762,039. Antiseptic attachment for telephone mouthpieces. J. Freel, Ladysmith, Canada.
 762,063. Process of making hollow rubber articles. I. F. Kepler, Akron, Ohio, assignor to The B. F. Goodrich Co.
 762,064. Process of making hollow rubber bulbs or other articles having necks or projections. *Same.*

ISSUED JUNE 14, 1904.

- 762,310. Rubber tire. J. Holland, Akron, Ohio.
 762,339. Hose coupling. H. W. McGibbeny, Findleyville, Pa.
 762,350. Hose coupling. J. L. Rehnstrom, McKeesport, Pa.
 762,462. Horseshoe pad. C. W. Zaring, New York city.
 762,473. Hoofpad for horses. C. A. Ellis, Warwick, R. I.
 762,474. Rule. C. S. Fosselman, Hartford, Conn.
 762,501. Pneumatic tire. G. Steinberg, Paris, France.
 762,737. Operating pad or receptacle. C. W. Meinecke and D. Hogan, assignors to Meinecke & Co., New York city.
 762,740. Pneumatic tire. T. Midgley, Columbus, Ohio.
 762,777. Hose or pipe coupling. S. N. Vernon, Sonora, Ohio.
 762,788. Hose coupling. G. W. White, Footscray, assignor to J. Wagglen, Hawthorn, both in Victoria, Australia.
 762,789. Garment supporter. B. C. Williams and F. C. Heine, Fort Wayne, Ind.
 762,832. Physical development apparatus. K. L. Minges, assignor to the Cartilage Co., both of Rochester, N. Y.
 762,843. Method of regenerating vulcanized rubber. R. B. Price, Chicago.
 762,852. Eraser. H. B. Tooker, New York city.

Trade Marks.

- 42,796. Waterproof outer garments. Aquascutum, Ltd., London, England. *Essential feature.*—The word AQUASCUTUM. Used since Aug. 13, 1865.
 42,814. Crude rubber like gum. The American Crude Rubber Co., Colorado Springs, Colo. *Essential feature.*—The letters P. F. U. [arranged in monogram.] Used since Feb. 11, 1904.

ISSUED JUNE 21, 1904.

- 762,954. Flexible metallic covered tubing. T. Smith, Chicago.
 762,998. Horseshoe. J. C. Higgins, Boundbrook, N. J.
 763,010. Hose coupling. W. E. Meredith, assignor of one half to C. W. Heckman, both of Richmond, Va.
 763,044. Rotatable or reversible heel for boots, shoes, etc. J. Clasen, Cologne-Poll, Germany.
 763,052. Colt or calf weaner. J. P. Etchison, Gallegos, New Mexico.
 763,100. Pneumatic brush. E. B. Howell, Butte, Mont.
 763,145. Vehicle wheel [with pneumatic tire]. J. A. Brennan, West Orange, N. J.
 763,175. Hose coupling. E. H. Gold, Chicago.
 763,191. Hose mender. J. B. Marvin, Frankfort, Ind.
 763,205. Drawing pen [with reservoir handle]. G. R. Pyne, Springfield, Mass.
 763,207. Belt conveyor. J. J. Ridgway, Rosebank, N. Y.
 763,210. Hose coupling. E. Schwamberger and J. Thomson, Pittsburgh, Pa.
 763,236. Hose coupling. J. Winkler, McKeesport, Pa.

- 763,241. Reservoir or fountain brush. J. Ballance, New York city.
 763,251. Expansible roll. J. H. Breck, Bristol, N. H.
 763,252. Cushioning attachment for receptacles. A. C. Bundy, Brooklyn, N. Y.
 763,304. Surgical or operating pad or cushion. C. W. Meinecke and D. Hogan, assignors to Meinecke & Co., New York city.
 763,306. Foot pad for furniture. D. L. Miller, Louisville, Ky.
 763,317. Hose coupling. L. R. Nelson, Boulder, Colo.
 763,338. Hose carrying tongs. J. M. Baker, Providence, R. I.

Trade Mark.

- 42,832. Dress shields. The Omo Mfg. Co., Middletown, Conn. *Essential feature.*—The word CURVETTE. Used since Jan. 1, 1902.

ISSUED JUNE 28, 1904.

- 763,475. Exercising machine. J. F. Frazee and H. V. Whitcomb, San Francisco.
 763,489. Inflatable boot tree. H. G. Hoyos, Hanover, Germany.
 763,517. Pen. H. W. Stone, Brooklyn, N. Y., assignor to A. A. Waterman, W. G. Frazer, and H. W. Geyer [comprising A. A. Waterman & Co., New York city].
 673,536. Tire for vehicle wheels. J. Alloatti, Paris, France.
 763,539. Pneumatic tire covering. G. F. Brown, Hurstville, New South Wales.
 763,550. Vulcanizing India-rubber boots or shoes. A. D. Field, Waterbury, Conn.
 763,551. Hand stamp. W. A. Forde, New York city.
 763,558. Rubber gasket making machine. F. E. Harthan, assignor to L. C. Taylor, trustee, both of Trenton, N. J.
 763,594. Hose nozzle holder. A. L. Chubb, Oakland, Cal.
 763,649. Boot or shoe heel. M. Winants, Liege, Belgium.
 763,652. Hose coupling. J. A. Allen, Seattle, Wash.
 763,683. Combined abdominal hernia pad. A. E. Magoris, Binghamton, N. Y.
 863,707. Inflating pump. H. K. Austin, Reading, Mass.
 763,837. Hose coupling. W. H. Bailey, Monongah, W. Va.
 763,909. Rubber tire. A. S. Krotz, assignor of one half to P. A. Staley, both of Springfield, Ohio.
 963,934. Overshoe holder. J. Stawartz, assignor of one-fourth to F. Gallant, both of Pittsburgh, Pa.

Trade Marks.

- 42,876. Waterproof textile fabrics. Hirsh Brothers, New Haven, Conn. *Essential feature.*—The words ANT and WET separated by the letter l, the letter l occupying the center of a white disk and above it the word ANT and below it the word WET on a black disk surrounding the white disk. Used since May, 1903.
 42,916. India-rubber shoes and goloshes. Ostasiatische Handels-Gesellschaft, Hamburg, Germany. *Essential feature.*—The representation of an oval in the center of which the letters E. A. T. C. are arranged. Above and below are two arrows and circles having dots in their center; at the top of the oval is a fancy device and a diamond. Used since April 27, 1903.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1904.

[* Denotes Applications from the United States.]

- 11,426. H. David, Manchester. Non slipping device for rubber tires. May 18.
 11,496. F. T. Marwood, Pleasington. Non skidding motor tire. May 19.
 11,516. F. Nusch, London. Guard for pneumatic tires. (L. Vanderpere-Simon, Belgium). May 19.
 11,538. E. E. E. Bailey, London. Golf ball. May 19.
 11,642. F. Sadler, London. Motor tire. May 20.
 11,771. R. E. P. Craven, London. Resilient tired wheel. May 21.
 11,795. J. Lines, Liverpool. Pneumatic tire. May 24.
 11,799. L. Johnston, Alnwick. Shaving brush of hair and rubber. May 24.
 11,858. T. C. Ladner and two others. London. Hose coupling. May 24.
 * 11,861. C. W. Maxon, London. Pneumatic tire. May 24.
 11,918. C. J. Axten and W. May, London. Metal and rubber pad for boot soles and heels. May 25.

- 11,924. C. P. E. Schneider, London. Wheel rim for pneumatic tires. May 25.
 11,968. E. B. Gibb, Glasgow. Pneumatic tire. May 26.
 12,033. J. M. Burnett, Manchester. Device for putting on and removal of tire covers. May 27.
 12,079. J. F. Mason, London. Revolving heel pad. May 27.
 12,109. J. W. Langdon, London. Reservoir attachment for pens. May 27.
 12,273. W. Richter, London. Process for the manufacture of articles of rubber. May 30.
 12,290. F. C. Boyle, London. Rubber tipped ferrule. May 31.
 12,301. N. B. Lawson, Glasgow. Waterproof suit. May 31.
 12,320. H. Crane, Jr., London. Waterproof and dustproof protector for boots. May 31.
 12,401. T. Jackson and A. Miles, Prestbury, Gloucester. Cycle tire. June 1.
 12,442. F. H. Sterling, London. Anti puncture device for tires. June 1.
 12,443. E. W. Warriner, London. Fountain pen. June 1.
 12,511. P. H. Haddleton, London. Mold for golf balls. June 2.
 12,523. A. J. Boulton, London. Expanding molds for making tire covers. June 2.
 12,524. A. S. Morrison, London. Resilient tire and fastening device therefor. June 2.
 12,534. M. McNally, London. Junction for the closed ends of tire tubes. June 2.
 12,565. T. Woolfall, Rochdale. Non skidding device for motor tires. June 3.
 12,566. W. H. Johnson, Leicester. Reversible heel for boots. June 3.
 12,574. J. Corson, Bradford. Fastener for holding rubber tubes to flexible metallic tubing. June 3.
 12,597. A. Wilson, Sydenham. Boot heel. June 3.
 12,657. A. C. Williams, London. Detachable boot heel. June 4.
 12,674. W. Cunningham, Glasgow. Golf ball. June 4.
 12,683. H. H. S. Scott, London. Armored hose. June 4.
 12,689. F. H. Richardson, London. Anti puncture device for motor tires. June 4.
 12,716. C. Kopp and D. Hone, Birmingham. Puncture proof device for pneumatic tires. June 6.
 12,779. W. H. C. Price, London. Method of attaching tires to rims. June 6.
 12,789. A. Eisenmenger, London. Fountain pen. June 6.
 12,812. J. Greenlees, Glasgow. Detachable boot heel. June 6.
 12,843. J. Heys, Waterloo. Method of attaching tires to rims. June 7.
 12,908. J. Pullman, London. Pneumatic tire. June 7.
 12,912. T. Midgley, Liverpool. Pneumatic tire. June 7.
 12,988. W. F. Williams, London. Elastic tire. June 8.
 12,998. A. L. Shepard, London. Pneumatic tire. June 8.
 12,999. F. G. McKim, London. Pneumatic tire. June 8.
 13,006. A. Pereno and J. Coulon, London. Pneumatic tire. June 8.
 13,030. H. Brooker, Waltham Cross, Middlesex. Band for pneumatic tires. June 9.
 13,052. J. Bamber, Manchester. Horse shoe pad. June 9.
 13,091. W. Strick, London. Means for fixing solid elastic tires to wheels. June 9.
 13,118. J. P. Cochrane and J. Jackson, Glasgow. Machine for winding rubber cores for golf balls. June 10.
 13,119. J. A. Olden, Liverpool. Pneumatic tire. June 10.
 13,132. A. P. Russell, Coventry. Method of compressing air on motors for inflating tires. June 10.
 13,198. A. W. Clayden, Exeter. Hose reel. June 11.
 13,209. Elizabeth Reed, trading as The Leader Rubber Co., Manchester. Revolving pad for boots. June 11.
 13,221. J. Partington, Keishley. Pneumatic tire. June 11.
 13,242. M. A. Adams, London. Elastic tire. (H. Adler, Transvaal.) June 11.
 13,295. C. Adler and F. Mousley, Birmingham. Pneumatic valve for playing balls. June 13.
 13,298. M. G. Plane and G. Phillips, Colchester. Puncture proof tire cover. June 13.
 13,303. J. W. Battey, Manchester. Heel pad for boots. June 13.
 13,329. W. Buckley, London. Tire for vehicles. June 13.
 13,348. J. Pyat, London. Nail extractor for pneumatic tires. June 13.

- 13,416. P. Heymann, London. Elastic bib to wear during hair cutting. June 14.
 13,443. J. C. Steiner, London. Appliance for imparting intermittent compression to elastic bulbs of vaporizers. June 14.
 13,493. F. Peace, Sheffield. Non puncturable tire cover. June 14.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JUNE 1, 1904.]

- 2,399 (1903). Golf ball [solid gutta core, covered with thin layer of rubber, and encased in gutta]. C. T. Kingzett, Chislehurst.
 *2,477 (1903). Life preserver [comprising a series of inflatable chambers, fitted with an adjustable belt]. J. A. Elenius, Calumet, Michigan.
 2,514 (1903). Pneumatic tire [protected from puncture by a strip of thin steel inside the cover]. J. L. Heward, Cardiff.
 2,548 (1903). Life saving buoy [to be worn on the person]. H. Condrén, Vancouver, British Columbia.
 2,591 (1903). Waterproof aprons for exposed seats of tramcars. A. L. Brown, London.
 *2,603 (1903). Pneumatic tire [with self sealing portions]. H. J. Haddan, London. (J. W. Blodgett, Chicago, Illinois.)
 *2,605 (1903). Lacing hook guard for leggings, boots, and the like. W. Lanz, Chicago, Illinois.
 2,634 (1903). Non slipping pneumatic tire. E. C. Pope-Sadler, London.
 2,662 (1903). Inflatable boot tree. Graf Hans Hoyos, Hanover, Germany.
 2,663 (1903). Puncture proof pneumatic tire. J. Hall, Ipswich.
 2,676 (1903). Hose coupling. F. Eissing, Kreuzlingen, Switzerland, and A. Spiegel, Constance, Germany.
 2,689 (1903). Blowing toy. H. Metzger, Paris, France.
 2,756 (1903). Pneumatic tire. H. Brookes, Stirling.
 2,760 (1903). Inflatable boot tree. G. Evans and J. Holmes, Northampton.
 2,766 (1903). Elastic exercising apparatus. T. Belvoir, New Southgate.
 2,816 (1903). Machine for making rubber surgical bandages. C. Blair, Preston.
 2,824 (1903). Rubber strips for vehicle windows. C. McKay and A. J. Stone, Cardiff.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JUNE 8, 1904.]

- 2,893 (1903). Waterproof coat for motor car drivers. J. E. Seaman and A. Jamieson Bradford.
 2,899 (1903). Pneumatic tire [two tires side by side]. P. A. and D. A. Martin, Birmingham.
 2,939 (1903). Apparatus for vulcanizing rubber strips for tires, belting, and the like. Christian H. Gray, Silvertown.
 2,969 (1903). Artificial hands. A. Daniels, Waterloo.
 3,071 (1903). Dancing toy. R. Uhrig, Altenessen, Germany.
 3,079 (1903). Hoof pad. R. H. and A. H. Coppin, Addington.
 3,157 (1903). Elastic exercising apparatus. F. W. Croucher, Fleet, Hampshire.
 3,227 (1903). Device for cleaning knives, kitchen utensils, and the like. E. Roberts, London.
 3,230 (1903). Golf ball. J. H. Roger, Glasgow.
 3,255 (1903). Non slipping pneumatic tire. W. M. Edwards, London.
 3,398 (1903). Pneumatic tire and rim therefor. C. Challiner, Manchester.
 [ABSTRACTED IN THE OFFICIAL JOURNAL, JUNE 15, 1904.]
 3,485 (1903). Substitute for rubber or leather. W. F. Reid (the inventor of "Velvrl"), Addlestone.
 3,557 (1903). Ball of zylonite for golf or croquet. British Zylonite Co., Chingford, and S. E. Bain, East Bergholt, Suffolk.
 3,560 (1903). Detachable boot heel. A. and H. A. Woodier, Runcorn, Cheshire.
 3,616 (1903). Boot heel. W. R. Watts, Hornsey.
 3,694 (1903). Revolving heel pad. A. E. Bigg, Manchester.
 *3,781 (1903). Syringe. E. B. Windler, St. Louis, Missouri.
 3,922 (1903). Rubber tube for penholders, to give a firm gripping surface and prevent writer's cramp. C. Baker, Southampton.
 3,923 (1903). Truss. T. P. E. Trotry-Girardiere, London. (Communicated from France.)
 *3,948 (1903). Elastic tire [made of a coiled strip of knitted fabric impregnated with rubber and vulcanized]. W. Esty, Laconia, New Hampshire.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JUN 22, 1904.]

- 3,995 (1903). Carriage step [with non slipping tread]. H. P. L. Triscott, Colchester.
 4,044 (1903). Pneumatic tire [with non slipping cover]. S. Butler, Westbury-on-Trym.
 4,135 (1903). Pneumatic tire [with metal protected plates within the cover]. M. Purser, Carlow, Ireland.
 4,182 (1903). Mold for golf balls. K. Gray, Chelsea.
 *4,183 (1903). Golf ball [with rubber core covered with silk or other textile and enclosed in a Gutta percha shell]. F. W. Smith, Bridgeport, Connecticut.
 *4,314 (1903). Toy animal [inflatable]. G. T. Hyde, London. (E. S. Savage, New York city).
 4,321 (1903). Means of inflating tires from the operation of a motor car. E. Girard and M. Ripert, Marseilles, France.
 *4,351 (1903). Hose coupling [for railway cars]. E. E. Gold, New York.
 *4,352 (1903). Solid rubber tire. R. S. Graham and W. S. Perkins, New York.
 4,398 (1903). Hockey stick [with India-rubber or Gutta-percha driving face]. W. G. Grenville, Birmingham.
 4,479 (1903). Pneumatic tire. J. H. W. Fitzgerald, London.
 4,511 (1904). Stuffing box packing. J. A. Fisher, London.
 4,591 (1903). Golf ball [formed by winding a rubber band under tension around a globular air chamber of glass and enclosing the same in a Gutta-percha shell]. M. A. Greenberg, Cheetham, and I. Cowen, Manchester.
 4,695 (1903). Pneumatic tire. E. A. Seddon, Brooklands, Cheshire.

GERMAN EMPIRE.

PATENTS GRANTED.

- 152,808 (Class 47f). Binding twine, the strands of which are covered with rubber solution. W. Reinhold, Berlin. May 26.

DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].

- 224,352 (Class 33a). Cane or umbrella ferrule with rubber attachment. Frank Schroeder, Breslau. May 26.
 224,807 (Cl. 12d). Filtering plate of porcelain provided with a rubber ring. Frau Marquart, Beul a/Rh. June 1.
 224,978 (Cl. 15h). Rubber stamp. A. Paetz, Hamburg. June 1.
 225,042 (Cl. 47g). Pump valve. Vereinigte Gummiwaaren-Fabriken Harburg-Wien, Harburg a/d E. June 1.
 225,043 (Cl. 47g). Pump valve. Same.
 225,171 (Cl. 63e). Tire tread with protective band of steel. L. Rieber and E. Schlüter, Magdeburg. June 1.
 225,230 (Cl. 63e). Armored rubber tire. M. Kroff, Hanau. June 1.
 226,116 (Cl. 30r). Pneumatic tire with protecting band. Bremer-Gummiwerke, Bremen. June 15.
 226,052 (Cl. 65a). Packed rubber swimming belt. G. Künzler and A. Künzler, Munich. June 15.
 226,033 (Cl. 63e). Hollow rubber tire having V-shaped profile, but not filled with air. W. Maybach, Cannstadt. June 15.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATE OF APPLICATION).

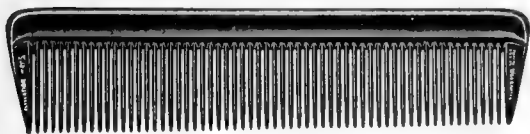
- 339,362 (Jan. 6). J. S. Tait. Horseshoe pad.
 339,366 (Jan. 6, 1904). R. A. Kent. Tire.
 339,452 (Jan. 9). Société Anonyme des Pneus Cuir Samson. Felly, designed for a removable protector for pneumatic tires.
 339,464 (Jan. 9). E. Lapisse. Protecting band for pneumatic tires.
 339,474 (Jan. 9). L. P. Stier. Device for attaching pneumatic tires to wheels.
 339,567 (Jan. 18). G. R. Fermer and F. W. Trash. Pneumatic tire.
 339,597 (Jan. 14). P. T. Somerville-Large. Pneumatic tire protector.
 339,614 (Jan. 20). J. Michel. Rubber joint for tubing.
 339,632 (Jan. 15). J. Clerget. Pneumatic tire.
 339,635 (Jan. 15). A. L. Bertinourt. Anti slipping device for tires.
 339,639 (Jan. 15). Société G. Chapman et fils. Manufacture of matting or other objects of rubber, in colors.
 339,667 (Jan. 18). C. W. Zaring. Anti slipping device for tires.
 339,690 (Jan. 21). T. Desgrey. Pneumatic tire.
 339,866 (Jan. 25). A. Chambole. Safety pneumatic tire.

[NOTE.—Printed copies of specifications of French patents may be ordered from R. Bobet, consulting engineer, 16, avenue de Villiers, Paris, at 50 cents each, post-paid.]

NEW GOODS AND SPECIALTIES IN RUBBER.

HOLLOW BACKED HARD RUBBER COMBS.

AS a rule, novelties in hard rubber combs are confined to a little difference in the shape, or in the finish of the back, or the stamping. But since the first rubber comb was made there has been, until now, scarcely any change in the fundamental principle of making these combs. The new comb for which patents have been issued to Dr. Heinrich Traun, of Hamburg, does, however, embody a distinctive novel feature in being made with a hollow back. The advan-



actual thickness $\frac{9}{16}$ "
width $2\frac{1}{4}$ "

tages claimed for this construction are many. For instance, the comb is stronger. A solid comb will sometimes snap when dropped on the floor, especially in the winter, when "it catches cold," lying on the marble slab of the washstand or on the window sill where the rubber has a chance to freeze. When it drops in this state, it almost invariably ends the life of the solid comb. Even if not frozen, should a heavy comb drop on the end tooth, the fall will break the tooth, and perhaps the neighboring teeth, through its own weight. The hollow comb has not enough weight to it to break the end tooth through such an accident. The principal benefit, though, is due to the fact that these hollow combs give the hand a very convenient grip on the back; they feel very comfortable in the hand, and are not heavy enough to tire the arm. It is not always under-



actual thickness $2\frac{3}{8}$ "
width $7\frac{1}{16}$ "

stood by men that dressing the hair is real work for those endowed with a luxurious growth, but such is the fact. The use of a thin comb sometimes cramps the hand; the thick but at the same time light combs made in the new way, make the work of dressing the hair infinitely easier and more pleasant. For delicate hands this comb is a positive boon. The new comb will be known as the "Revelation" comb and will be stamped with this name, as well as with the trademark of the Harburg Rubber Co., showing a man sawing wood. The patentee is the head of the firm of Dr. Heinrich Traun & Sons, formerly the Harburg Rubber Co., of Hamburg and Harburg, Germany, the largest manufacturers of hard rubber goods. These goods are sold by Schrader & Ehlers, United States agents, No. 335 Broadway, New York.

"ELLIOTT GET THERE" GOLF BALL.

THE construction of the ball illustrated herewith consists in forming a body of textile material, with or without a core, and enclosing it within a shell of Gutta-percha. The textile material used may be stockinet, or such like woven fabric, or loosely

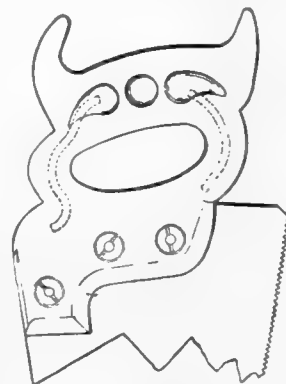
twisted woolen yarn. The yarn, or stockinet in tapes, before use, is immersed in India-rubber solution, to give additional resiliency to the ball. The body of the ball may be formed by winding the textile material upon itself, or it may be wound upon a wooden or other core. The tape or yarn is stretched, in winding, to the fullest possible extent. The Gutta-percha shell is applied in the usual manner. The object of the invention, as stated in



the specification of United States patent No. 731,026, issued to Charles B. Elliott, "among other things, is to provide golf and other playing balls of good quality at a comparatively small cost," and it is understood that the new ball already has met a very encouraging sale. [Elliott Manufacturing Co., Menlo Park, New Jersey.]

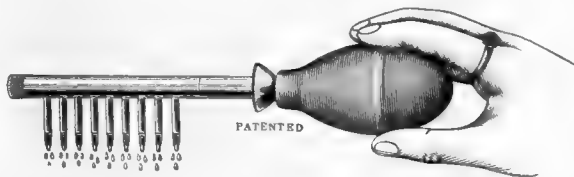
A RUBBER SAW HANDLE.

AMONG the newest ideas for the purpose of increasing the comfort of the workman is a saw handle made of rubber. The advantage of such a handle is that, being elastic, it prevents vibration and jarring of the hand of the operator, and also that, as it is non-breakable, it may be detached from one blade and put on another, and is, therefore, practically indestructible. In shape and appearance, with the exception of the color, the handle is the same as the wooden one now in common use. In its manufacture the handle is made by pressing the soft rubber in a suitable mold; and, at the time of its formation, two small pieces of heavy wire are suspended within the mold in such a position that when the handle is complete the wire acts as a reinforcement at the weak parts above and below the finger opening. These pieces are bent so as to conform to the shape of the handle. The blade is inserted in the handle in the usual manner: that is, in a slot and hung attached by screws.



"SCALP SPRAYER" FOUNTAIN COMB.

THIS is a newly patented article, intended for the cure of dandruff, falling hair, and scalp diseases, through the conven-



ient application of the remedial agents to the scalp direct. The illustration, based upon the patent drawings, is designed not to show a complete comb, but to indicate the principle of construction. The comb has a tubular back, provided with discharge orifices leading to the teeth; a collapsible bulb connected with the tubular back; a handle provided with a guard

to protect the bulb against accidental compression; and a drip cup located between the handle and the comb to protect the former against any leakage of the fluid used. This device may also be used by ladies for bleaching, dyeing, and dressing the hair. Its use avoids the waste of fluid preparations, and does not soil the hands. United States patent No. 753 968, issued March 8, 1904, to Arthur John Farmer. [Western Comb Works, Detroit, Michigan.]

A PEN WITH A SOFT RUBBER TIP.

THOSE who have given the matter any thought are doubtless aware that the many Japanese who are able to write do so with a reed pen, and in characters that do not lend themselves to the metal pen used in the Western world. Their pen, however, wears out easily and is so far from being satisfactory that the new rubber pointed pen (the tip being of soft rubber and of Japanese make), has become instantly popular. A short length of hollow reed fits over and protects the rubber tip, which, by the way, is as neat a bit of mold work as any rubber manufacturer need desire. It is not only grooved so that the ink which clings to the outside of the tip will lead down to the fine point, but at the bottom of each groove is a slit leading into the hollow interior so that a sort of fountain supply is also obtained. The various excellencies of the pen as well as the name of the manufacturer appear in the characters shown on the penstock. Such a pen is illustrated here.

A NEW FAUCET CONNECTION.

THIS invention is intended for use in connection with the "Knickerbocker" rubber



fountain bath brush, described in this department of THE INDIA RUBBER WORLD, August 1, 1903 [page 381], said brush comprising numerous rubber ducts, through the tip of each of which a tiny stream of water flows when the brush is connected to a faucet,

say in a bathroom. The new faucet connection, for which United States patent No. 761,505 has been issued to Burton D. Knickerbocker, is illustrated herewith. The surface of this device, where it engages the faucet, being rounded, there is no liability of the rubber starting to tear at the point of contact. Two metal rings are used to stiffen the rim of the connection, and are so firmly held together that the beaded rubber edge extending around the outside of the rim cannot pull out of place. These features add to the durability of the faucet connection, besides which it is easy of attachment to any style of faucet. In cases where bathrooms are not fitted with combination hot and cold water faucets, the new device is supplied as a double faucet connection. [Knickerbocker Manufacturing Co., No. 40 Dearborn street, Chicago.]



JAPANESE PEN.

RUBBER LEGGING.

THE very handsome rubber legging shown in the illustration is made from a photograph. The legging referred to is made of rubber coated duck, and fastened with hooks and laces; the same style is also made to be fastened with spring. This legging is made by The Berlin Rubber Manufacturing Co., Limited (Berlin, Ontario), who have the exclusive rights for its manufacture in Canada.



RUBBER COVERED BELT CONVEYOR PULLEYS.

IN the belt conveyor system of the Webster Manufacturing Co. (Chicago), for handling grain, minerals, and raw materials and products of a great variety of mills, in addition to the conveyor belts, another use of rubber is involved. That is, the head pulleys in many cases are covered with 4 ply rubber belt, securely attached to the face of the pulley with large flat head bolts sunk in flush with the outer surface of the rubber covering. The ends of the covering are serrated, the serrations interlocking one another, thus presenting a smooth, continuous surface.

BRIEF NOTES OF NOVELTIES.

IN France the motor cyclists have received so many broken heads that resort has been had to a pneumatic helmet to soften the blow when the rider alights on the wrong end. It consists of a hollow leather cap which is inflated with air just like a bicycle tire.

=Pretty sunbonnets, so called, of silk rubber, are made this season for ladies' wear at the sea beaches. They can be worn as large hats with a wide rim and deep frill in the edge. They come in red, in blue, and in black, and cost 75 cents each in the New York shops.

=A new straw hat protector for rainy weather has made its appearance. It's a fine rubber cover which fits tightly over the crown and rim of the hat. It is guaranteed not to let the rain through. In fine weather it can be rolled up and carried in the inside pocket.

=A sebackroscope is one of the impolite toys of the day. It is made of rubber, and to fit into the eye, as the jeweler's magnifying glass does. When it is in place the user can see not only what is going on in front of him, but what the people back of him are doing—at least, that is what is claimed for the small glass. They do not cost much, and any one can get one if the detective force does not learn of them and buy out the stock.

=A New York druggist has imported from Germany an aid to sleep, which is said to be common enough there, though it was never before known here, where it must be needed much more than in that quieter country. The appliance consists of two rubber objects not unlike small mushrooms, which fit into the ears and keep out all sound. Persons accustomed to using them are able to sleep in the noisiest quarters, as sound is completely deadened. Others, who do not find it necessary to use them all night, put them into their ears in the morning, when the city is awake and moving. That is the time of the day when such a contrivance would be most useful to the average New Yorker.

BRITISH RUBBER MACHINERY.

AMONG the British manufacturers of machinery adapted especially for the India-rubber industry, a prominent position is held by Messrs. David Bridge & Co., of the Castleton Ironworks, Castleton, Manchester, successors to the late John Mills, Oldham. The list of products of this long established business is extensive and varied, and selections from their catalogue cannot fail to prove of interest to the trade in America, owing to the differences in practice prevailing on the two sides of the Atlantic. It is natural that, in view of the great development of the waterproofing trade in Great Britain, an important section of the Messrs. Bridge's catalogue should be devoted to appliances in this branch of the rubber industry, for which reason our first selections from the list relate to the waterproof manufacture.

SPECIAL POLISHING, CURING, AND PASTING MACHINE.

THE first of the machines illustrated herewith (Figure 1) is really a combination of three machines in one. It consists mainly of two independent frames fixed a little distance apart on the floor, and a wooden drum fixed to the ceiling. When the machine is in use for *polishing*, the cloth, which is wrapped on a wooden roller on removable conters fitted with brake arrangement on the front of the left hand frame, is passed under a wooden carrier roller immediately behind the same and over two iron carrier rollers fixed on the top, between which a doc-

the top. When all the cloth is wound on to this front roller, it is ready fixed for polishing, or the roller can be brought to the back ready for curing.

COLD CURE AND ELECTRIC FINISHING MACHINE.

THE coated cloth to be treated by this machine (Figure 2) is coiled on a roller fitted on a loose center a little to the right of the tall center standard, from which it is conducted under carrier rollers, over a slate liquor roller revolving in a box, provided with a quick raising arrangement of levers to raise

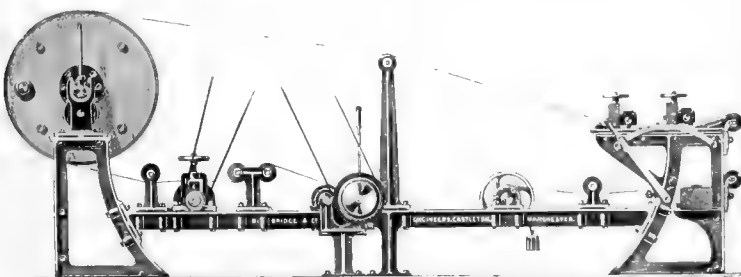


FIG. 2.—COLD CURE AND ELECTRIC FINISHING MACHINE.

tor with rubber face depresses the cloth, and in front of which any polishing material may be placed. This doctor is shown raised in the illustration, but in use for polishing would be in the position indicated by the dotted line. The cloth then passes over the large wooden drum or roller fixed to the ceiling, and down to the back of the steam drying cylinder on the right hand frame, which it tightly grips for about half the circumference, then passes over a guide pulley on the tall standard, and is wrapped on a wooden batching roller driven by frictional contact with a larger roller fixed in front of the right hand frame. This roller is driven by a belt through a cone pulley and a pair of strong wheels.

When the machine is used for *curing*, the cloth roller is fixed in the brackets behind the left hand frame, and the cloth is passed under the guide rolls fixed on the bottom of the frame, and over the liquor box between them, in which is a slate roller made to revolve by friction of the cloth. On the side of this box a lever arrangement is fixed by which the cloth can instantly be lifted out of range of the liquor so as to avoid damaging the wrapper cloth. The cloth then passes over the iron carrier roller on the top of the frame and direct on to the drying cylinder on the right hand frame, from which it is wound on by the same arrangement as used for polishing cloth.

When the machine is used for *pasting* the cloth, the roller is carried by the same brackets at the back of the left hand frame, and is wound by hand on to the roller in front of the same frame over a steam heated pasting chest fixed at the back on

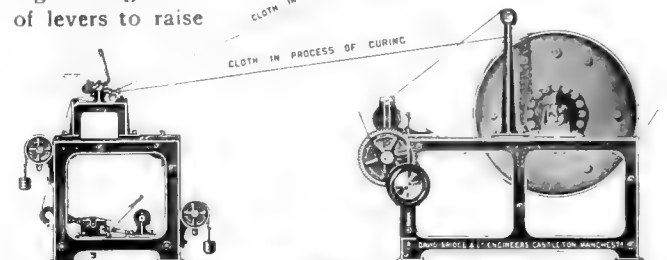


FIG. 1.—POLISHING, CURING, AND PASTING MACHINE.

the naked wrapper out of contact with the roller. The cloth then passes over the carrier roller at the back top corner, and down an incline, and under a steel bladed doctor in front of which the farina is evenly laid by the attendant. The cloth next proceeds under a second doctor of wood with smooth edge, and away over the carrier roller on the tall standards, round the steam drying cylinder at the left, and, guided by a carrier or guide roller, over a quickly revolving adjustable brush, and thence, guided by two wood guide rollers on to the winding-on roller, a little to the left of the tall standard, driven by cone speed belt pulley and spur gearing. Sometimes the brush is enclosed in a box to prevent the waste of farina. The machine is provided with strong claw clutch and striking gear arrangement to stop and start instantly.

When this machine is used for curing only, the cloth does not pass under the two doctors, nor does it come in contact with the brush, but passes over the doctors on its way to the drying cylinder, and direct from the cylinder to the winding-on roller.

THE CHALKING MACHINE.

THIS is an almost necessary adjunct for all India-rubber works, and particularly so where such classes of goods are manufactured on the spreader or calender as require afterwards to be stripped from the cloth upon which the material is

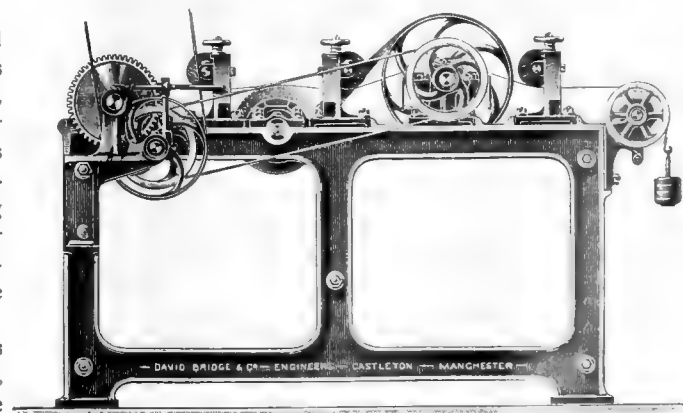
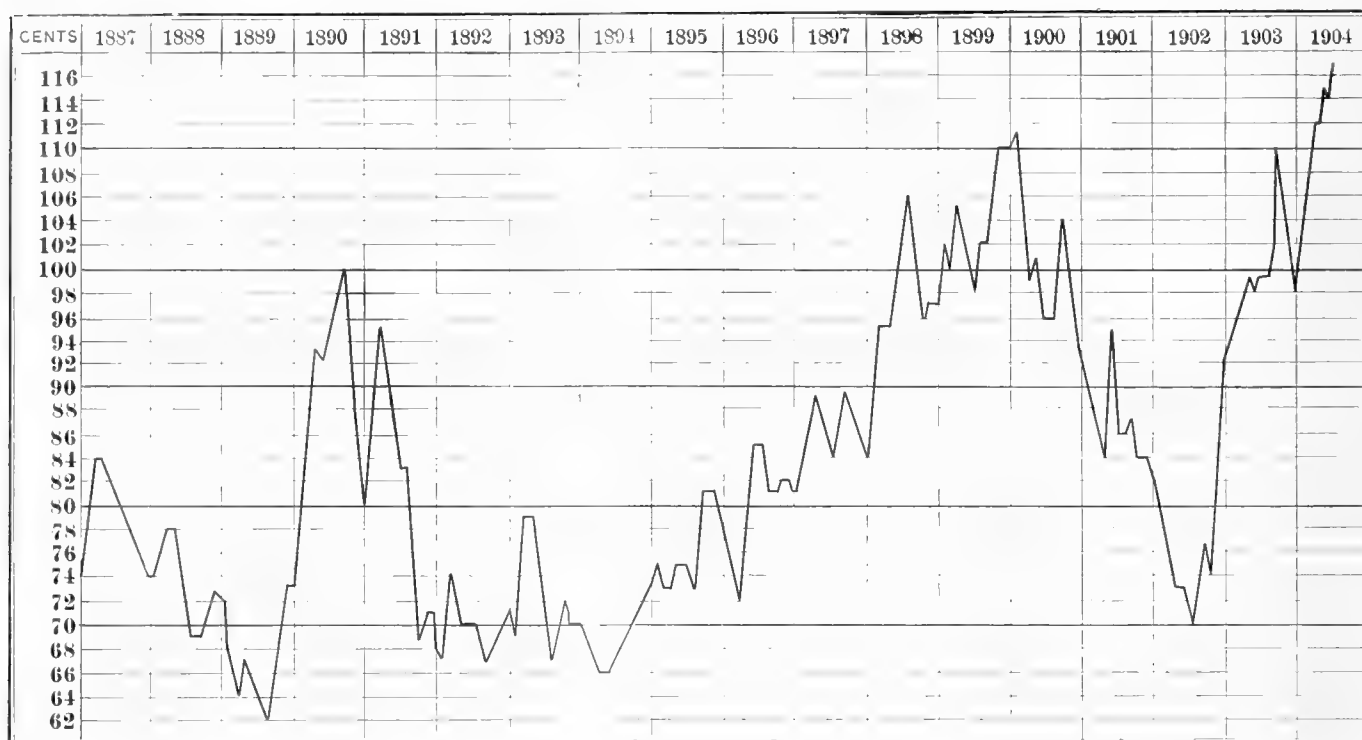


FIG. 3.—THE CHALKING MACHINE.



PARA RUBBER PRICES FOR EIGHTEEN YEARS (BASED ON HIGHEST NEW YORK PRICE EACH MONTH).

spread. The machine illustrated in Figure 3 is a compact appliance, specially manufactured by Messrs. Bridge & Co., and consists of a substantial framework of cast iron, at one end of which the cloth or other material which it is desired to chalk is wrapped on a roller fixed in easily removable centers provided with a brake arrangement. At the other end, the cloth is wrapped upon another roller fixed upon similar centers, but driven by belt power through a pair of spur wheels. The top of the frame carries a chalk box, fitted with an agitator in which a roller revolves driven by the friction of the cloth; also a quickly revolving brush. The full width of the machine is fixed upon the top of the frame, the bristles of which come in contact with the material, thus spreading the chalk equally, previous to its being wound on to the power driven roller. Carrier or training rolls are also fixed upon the top of the machine, to give the material the necessary tension over the chalking and brushing rollers. The brush is usually enclosed in a box provided with a slit through which the material passes.

LITTLE DANGER OF A RUBBER FAMINE.

FROM THE "ELECTRICAL REVIEW" (NEW YORK).

A SHORT time ago we made note of a report from a United States consul in Mexico, relating to rubber culture in that country, which took a discouraging view of the matter. This consul could see no success in prospect for the many rubber plantations which have been started there, and on which large sums of money have been expended. He thought, however, that there was some hope that new rubber fields might be discovered, and that in this way the increasing demand for this product would be met.

The following week another report was noted, this time from the United States consul at Pará, Brazil. This report took the opposite view, and gave some details of several rubber plantations in that country which are already yielding *latex*, and

which promise to become important, not only as a source of rubber, but as demonstrating the success with which these trees may be planted and cultivated.

As is well known, rubber is the most important insulator we have yet discovered for high tension conductors and for inside wiring. The demand for this material is increasing enormously, and it is therefore important to know which of the two reports alluded to is to be trusted. The subject is considered in a sharp editorial appearing in the current issue of THE INDIA RUBBER WORLD, which criticises the report of our consul in Mexico, takes him to task for not ascertaining the correct facts, and which states that there are now plantations in Mexico well advanced, with every prospect that they will be successful as sources of rubber.

This issue of our contemporary also contains a letter from its Editor, who is at this time making a trip for the purpose of inspecting the rubber producing countries. In this details are given of a visit to several plantations in Ceylon, where there are large trees already giving good yields. There seems to be no difficulty in raising the trees from seeds, and the methods of tapping the tree and of curing the *latex* are receiving study. The letter takes a very encouraging view of the situation, as not only have the trees already planted flourished, but there are large sections of country which have not been planted, but which are suitable for rubber culture. It is exceedingly gratifying to learn through such a reliable authority that there is little danger of a rubber famine in the near future.

A PRESS despatch from Topeka, Kansas, dated July 23, says: "Farmers in the wheat belt are harvesting their wheat in rubber boots. Senator McMillan of Ottawa county stated to-day that he has within the past week seen hundreds of men wading in water and mud cutting wheat with cradles. The senator says merchants in Ottawa county were unable to supply the demand for rubber and hip boots."



EXHIBIT OF THE B. F. GOODRICH CO. (AKRON RUBBER WORKS) AT THE ST. LOUIS WORLD'S FAIR.

THE exhibit made by The B. F. Goodrich Co., of the Akron Rubber Works, at the World's Fair of 1904, at St. Louis, covering selections from the products of all departments of their extensive factory, is probably the most comprehensive exhibit of rubber goods ever made by any manufacturer. The company have been highly complimented on the exhibit as a whole, which has been spoken of as the most attractive display in the Palace of Manufactures. The setting of the exhibit is attractive, while the specimen products which it embraces are grouped with a pleasing effect of which but small idea can be given in a picture on the small scale made necessary by the restricted size of our pages. The articles shown embrace Mechanical Rubber Goods, such as hose, belting, packing, mold work, etc.; Tires, for automobiles, carriages, and bicycles; Druggists', Surgeons, and Stationers' sundries; and Haskell golf balls.

An occasional correspondent of THE INDIA RUBBER WORLD at St. Louis writes:

"After an inspection of the exhibit of The B. F. Goodrich Co. (Akron, Ohio) in the Manufacturers' building, the visitor is forcibly impressed with the thought that the daily walks of mankind would be changed materially if the supply of rubber were cut off. The variety of goods shown causes him to wonder if there is anything used that the manufacturers cannot make, or help to make, in some form or other, out of this wonderful material. He may start at one part of the display, and have every turn of the average day's doings suggested by some article made of rubber, from the time he arises in the morning until he retires, and this is true if he be a business man, a so-

ciety devotee, or a sport. The display of the Goodrich company in point of floor space, as well as in the variety of articles shown, is one of the largest at the Exposition, covering an entire block in the northern section of the building devoted to manufactures.

"To the trade it furnishes a triple attraction. First there is Frank R. Tate, who has charge and who can tell you 'what's what' in the rubber world 'right off the reel'; second, the colors of the booth have been arranged to blend with the general plan of the architecture, giving the whole a pleasing appearance; and third, there are the Goodrich pictures—'Katie' and all the rest of the girls whose faces have become familiar to customers—looking down from the walls of the reception room, to extend their silent welcome.

"Probably the most attractive single item shown is the rubber matting which covers all the floors. It is done in imitation of gray marble tiling, the blocks laid between black strips two inches wide, and the whole skirted with a dark border. The reception room floor is covered with the same material colored green. In the surgical department, an important part of the display, is shown an excellent line of water jackets for use on different joints of the limbs. The goods for the bath and for improvement of the complexion are given considerable space. Prominence is also given to the sporting goods department.

"The company show a great variety of rubber tires, the largest of which is a solid wire tire 36×7 inches. Some of the tires are mounted on wheels exhibited by vehicle manufacturers, and others are on silver plated rims belonging to the Goodrich company."

RUBBER PLANTING INTERESTS.

SULO=SUCHIL PLANTATION CO.

[Plantations at Sulo-Suchil, canton of Manatitlan, state of Vera Cruz, Mexico. Office: 835 The Spitzer, Toledo, Ohio.]

THE annual inspection was made by John A. Giedeman, of Toledo, Ohio, inspector for the shareholders, whose report, dated March 25, gave the statistics of planting on the company's three plantations already printed in THE INDIA RUBBER WORLD of December 1, 1903 [page 85]. The report gave a good account generally of the condition of the growing crops and details of improvements made on the estate. Regarding rubber he wrote: "The best rubber I saw was growing on land where the forest growth had been removed, on which the trees approximated 30 feet in height with a diameter of 10 to 12 inches, planted in rows 9 × 9. There is probably 100,000 of such trees. I slashed many of them and they bled freely. I cannot say that rubber growing under shade with coffee impressed me so well as to size, age considered. Even so, I regard this class of rubber as an asset of great value, and am satisfied it will mature under slight comparative delay, and that the company can rely on same in due time as a source of splendid revenue." The company have since issued a book of half tone views, from excellent photographs, to illustrate the appearance of different features of their property, and as a supplement to Mr. Giedeman's report.

RUBBER TREE PLANTING AT PARÁ.

THE United States consul at Pará, Brazil, Mr. Louis H. Aymé, reports having visited a small plantation of *Hevea Brasiliensis* in a suburb of that city, formed and owned by a wealthy gentleman named Martins. Several hundred of the planted trees are now considered ready for yielding latex, and the consul saw several trees tapped, the method of extraction, smoking, etc., being the same as practiced in the forest *estradas*. There are thousands of other rubber plants on the same property, ranging in age down to two years, and the owner thinks that they will form a valuable legacy to his family. The age of the productive trees is not given, but the report implies that 10 to 14 years is the age to begin tapping. Nor is the rate of yield given. The site of the plantation is "rather high, sandy ground, sloping gently to the northeast to low ground, where a fine spring broke from the earth."

PROFITS OF THE SOCIÉTÉ A B I R.

THE Société A B I R (Anglo-Belgian-India-Rubber and Exploration Co.), an important *cessionnaire* company in the Congo rubber trade, was mentioned in the last INDIA RUBBER WORLD as intending the distribution on July 1 of a dividend of 500 francs per share. It now appears that this was in addition to a dividend of 700 francs per share already paid out of the profits of 1903, or a total of 1200 francs per share, on 2000 shares. The net profits were about 2,890,000 francs [= \$557,770], on a capital of 1,000,000 francs. The company sold during the year 700 tons of Caoutchouc, and at the close of the year had on hand 348,950 kilograms of Caoutchouc and 5990 of ivory. It is reported that the Société A B I R will subscribe two-thirds of the proposed capital of 600,000 florins [= \$241,200] of a Netherlands company formed to establish a plantation of rubber in the Straits Settlements, for which purpose an amount equal to 180,000 florins has been held in reserve from the profits of A B I R for the past business year. It was rumored, recently, that the Congo Free State, after taking over the exploitation of the concession of the Société Anversoise pour le Commerce au Congo, intended to also take in hand that of the A B I R, but, as yet, this rumor has not been confirmed. Nevertheless, all this points to the in-

tention of the Congo state to control more fully the affairs of the *cessionnaire* companies.

RUBBER IN ONE MALAY STATE.

THE annual report of the British official resident in Negri Sembilan, one of the Federated Malay States, for the year 1903, notes an increased interest there in the cultivation of Pará rubber. Exports of cultivated rubber for the year amounted to 14 61 piculs [= 1948 pounds], against only 1 picul [= 133½ pounds] in 1902. The value stated for the 1903 exports is \$3714. silver, which, at recent exchange rates, would be equal to about \$1736, or 88½ cents per pound. A considerably larger output is expected for 1904. During the past year about 20,000 acres of government lands were applied for, to be planted to rubber. — Last year the *Tropical Agriculturist* estimated the acreage of planted rubber in Negri Sembilan at 1500, and for the whole of the Straits Settlements at 16,600. — During the year the Seremban Estate Rubber Co., Limited, was formed, to acquire certain rubber planting properties at a cost of £31,666 [= \$154,103], for one half of which the vendors accepted shares in the new company.

NEW RUBBER PLANTING COMPANIES.

THE Amapa Rubber Plantation Co. was incorporated May 11, 1904, under Maine laws, with \$2,000,000 capital authorized, to be in a position to engage in rubber culture in Mexico, under certain circumstances. The directors are: I. L. Fairbanks (president and treasurer), L. A. Burleigh, and J. Berry, Augusta, Maine; Rufus T. Goodell and Dean L. Robinson, New York.

— Federal Plantation Co., incorporated September 9, 1903, under Maine laws; authorized capital, \$2,000,000. Directors: William Vernon Backus (president), William Backus, Sr., A. E. Hyre, Irma Harms, F. H. Coleman—all of Cleveland, Ohio. Organized to develop a rubber plantation adjoining those of the Mexican Investment and Manufacturing Co. and The Imperial Plantation Co., both of Cleveland, both mentioned more fully hitherto in THE INDIA RUBBER WORLD, and all owned by the same interests.

— Boston Rubber Plantation Co., incorporated July 8, 1904, under Maine laws; capital, \$300,000. Incorporators: Horace Mitchell (president and clerk), Kittery, Maine; A. M. Meloon (treasurer), Newcastle, New Hampshire; M. G. Mitchell, Kittery; Horace E. Bragdon, East Boston, Massachusetts; Elbert K. Sherman, Newtonville, Mass.; Thomas M. Durell, Somerville, Mass.

— El Guapotal Rubber Plantation Co., incorporated June 29, 1904, under Wisconsin laws. Incorporators: Henry P. Hohel, Henry C. Schaper and Henry Hannan; office at Madison, Wisconsin.

RUBBER PLANTING COMPANY PUBLICATIONS.

THE Tehuantepec Rubber Culture Co., New York = Plantation Rubio Illustrated. [A series of photographic views, to accompany the report by Grosvenor Calkins, official inspector, reviewed in THE INDIA RUBBER WORLD, May 1, 1904—page 271]. 44 pages.

The Consolidated Uvero Plantations Co., Boston. = *The Tropical News*, June, 1904. [Containing Report of the Inspector, Dr. Charles T. Baylis, of Brooklyn, New York.] 16 pages.

Coliseo Sugar Plantation Co., Milwaukee, Wisconsin. = *Coliseo Journal*, No. 1—June, 1904.

Batavia Co., Inc., Milwaukee, Wisconsin. = (a) Annual Report No. 1. Batavia Plantation. By Ben L. Edgerton, Inspector. 31 pages. (b) Annual Bulletin, No. 1—July 1, 1904. 12 pages.

Mexican Rubber Co. of Providence (Rhode Island). = (a) Life as it is in Old Mexico. Facts Regarding Cultivated Rubber. 64 pages. (b) Report of William B. Wofford, Tropical Agriculturist. 5 leaves.



EXHIBIT OF THE BANNER RUBBER CO., OF ST. LOUIS, AT THE WORLD'S FAIR.

THE Banner Rubber Co., of St. Louis, are showing the world how their products are made, by working a full "ticket" on boots, arctics, and overshoes, in their own factory, in the Palace of Manufactures at the World's Fair. This company has a floor space 12×32 feet, in Block 22 A, in the southern section of the building. The booth is 12×35 feet, and 15 feet high. It was the original intention of the company to operate a fully equipped rubber factory on the fair grounds, but lack of space for the heavy machinery required in preparation of the rubber, and for the vulcanizing outfit, made this impracticable. The work done in this booth, therefore, begins with the receipt of the prepared rubber from the company's factory outside of the fair grounds, after which the work of making footwear proceeds until the products are ready for vulcanizing, when they are carted to the factory.

There are enough people at work at the exhibit, however, to show the public how rubber shoes are made "in the Banner company way." A comprehensive idea of the material used may also be obtained from the exhibit, by a study of the construction of the booth, which is made up largely of raw material. The general plan is open, of course, which permits the

exhibitors to bring out some unique effects. The rubber covered columns supporting the arches rest at the bottom on a half "biscuit" of the crude article, and at the top they are capped with the other half inverted. Washed and dried Pará rubber covers all the plain parts, and the entire booth has the appearance of being built up from stock from the calender. Designs worked out with heels, soles, etc., are used on the panels for ornamentation.

An unrefutable argument for the toughness of the soles of the "Buckskin" boots is shown by an actual test in one part of the exhibit. A strip two inches wide is cut from the sole of a boot suspended by the heel, which has sustained a weight of 110 pounds. The loosened strip is stretched to more than double its original length, and is held in that position by a fastening to the floor. A strip of the same width cut from another shoe is shown supporting the weight of a ten pound flatiron, and is stretched to a double length.

It is believed that this is the first time that rubber shoe making has ever been shown at any large exposition. Indeed, no large exposition has ever before been held in a city where a rubber shoe factory was located.

RUBBER INTERESTS IN EUROPE.

THE Compagnie pour le Commerce et l'Industrie du Caoutchouc (Brussels) have successfully placed an issue of 1800 shares, in accordance with a decision at a recent special meeting of the company to create 3000 new shares to pay for the newly acquired factory of the Société Anonyme Centrale Belge, at Alost, and to provide necessary funds for running expenses. Part of the shares created being given in payment for the property acquired, there remained but 1800 to offer to the old stockholders. The profits realized during the half year ending June 30 last will give a profit of 9 francs on each share of capital stock. The anticipated profits of the next half year can be so entirely devoted to the liquidation of debts as to establish still more firmly the financial condition of the enterprise. Since 1898, the year in which it was organized, the company has shown from its successive balance sheets a constantly increasing prosperity, as shown by the table following:

YEAR.	Profits (Francs).		Dividends.	
	Gross.	Net.	Preferred.	Ordinary.
1899.....	155,331	99,460	6.30	1.75
1900.....	207,181	126,609	6.30	1.95
1901.....	208,041	111,503	6.	1.50
1902.....	365,879	244,030	6.50	2.25
1903.....	463,260	345,220	3.	4.50

RUBBER GOODS EXPORTS FROM GREAT BRITAIN.

OFFICIAL statement of values for the six months ended June 30 of the last three years:

	1902.	1903.	1904.
Boots and shoes	£ 69,642	£ 84,826	£ 99,203
Other sorts.....	532,836	585,832	592,835
Total.....	£602,478	£670,658	£692,835

Exports of rubber footwear during the periods above stated were 55,751 dozen pairs in 1902; 74,304 dozen pairs in 1903; and 86,605 dozen pairs in 1904.

The above figures do not include waterproof apparel. The values of exports of apparel "waterproofed by any process" [rubber or other] were: £123,379 for the first six months of 1902; £148,164 for 1903; £137,775 for 1904.

NOTES.

THE director of the Continental Caoutchouc-und Guttapercha-Co., of Hanover, Germany, Herr Adolf Prinzhorn, who was born in Diepholz, has been made an honorary citizen of that village, by a unanimous vote of the village council, in consideration of the founding there of various institutions by means of which Herr Prinzhorn has shown his interest in the development of his native place.

=The Continental Caoutchouc-und Guttapercha-Co. (Hanover, Germany) have concluded a loan of 2,000,000 marks, at 4 per cent., with the following banking houses: Bernhard Caspar, B. Magnus, Mendel & Rosenthal, and D. Peretz, of Hanover. The loan is to be used for the purpose of erecting new buildings and enlarging the works in general.

=The Mitteldeutsche Gummiwaren-Fabrik Louis Peter (Frankfurt a/M., Germany) is represented at the Louisiana Purchase Exposition at St. Louis, under the name of the Peter Union Pneumatic Tyre Co. Mr. Richard Brockemühl is in charge. The exhibit is devoted chiefly to Peter's Union pneumatic tire and patent double rim.

=The Prager Gummiwaren-Fabrik Actiengesellschaft (Vysocan, Austria), having been liquidated, its factory will continue to be operated by the Oesterreichisch-Amerikanische Gummi-fabriks Aktiengesellschaft (Vienna). The factory belonged to the latter company prior to 1897, when it passed under the control of an independent company organized for the purpose.

NEW TRADE PUBLICATIONS.

THE HARTFORD RUBBER WORKS CO. (Hartford, Connecticut) issue a new catalogue of Automobile Tires, devoted to illustrated descriptions of the Dunlop detachable and Hartford clincher styles of tire—both pneumatics—and the Turner solid tire. Incidentally some good rules for the care of tires are given. [7½" × 4¾". 24 pages.]—A handsome folder is entitled The Perfected Dunlop Detachable Automobile Tire. [6" × 7¼". 6 pages.]

THE DIAMOND RUBBER CO. (Akron, Ohio), send us a handsomely got up and very complete illustrated and priced catalogue of their line of Hose. It embraces much information of a practical character regarding rubber hose in general, while calling attention to the distinctive features of the products of this company. [5" × 7". 56 pages.] Another catalogue from the same house, prepared on similar lines, is devoted to Molded Goods, of which a great variety are mentioned. [5" × 7". 20 pages.]

G & J TIRE CO. (Indianapolis, Indiana) issue a handsome brochure entitled "Home of the G & J Tire," illustrating, by means of excellent half tone cuts, the various processes of making tires in the company's factory. We have seen no better illustrations relating to this particular industry. The text begins with a description of the rubber in its crude state, and explains how it is brought, finally, into shape as a pneumatic tire, for bicycle or automobile. [6¼" × 8¾". 16 pages.]

C. J. BAILEY & CO. (No. 22 Boylston street, Boston) have brought out a new catalogue of "Everything in Rubber Goods," which they carry in wholesale and retail. It includes Bailey's rubber brushes and other toilet articles, massage rollers, footholds, ribbed back rubbers, and "Won't Slip" tires, and all the other Bailey patented specialties, together with a general line of druggists' sundries and articles in rubber for household use, ending with mackintoshes and other waterproof clothing. [3½" × 7¼". 100 pages.]—Bailey "Won't Slip" Clincher and Single Tube Motor Carriage Tires. [3" × 6". 4 pages.]

THE OHIO RUBBER CO. (Cleveland and Cincinnati) issue a new edition of their illustrated catalogue of Storm Proof Clothing, which, as usual is made attractive by illustrations of tasteful new styles. The catalogue embraces Stoughton mackintoshes, Priestley Cravenette raincoats, rubber surface clothing, and such specialties as horse covers, dash aprons, camp blankets, and the like. [4" × 9". 16 pages.]—An 8 page price list accompanies the catalogue.

THE HOGGSON & PETTIS MANUFACTURING CO. (New Haven, Connecticut), who advertise in this journal rubber manufacturers' supplies, number among their specialties the Sweetland Chuck, suited for a wide range of machine shop work, and to which is devoted the principal portion of the company's Catalogue No. 7, dated July, 1904. [4¾" × 7". 54 pages.]

ALSO RECEIVED.

KNICKERBOCKER Manufacturing Co., Chicago.=Bath Luxury. [Referring to Knickerbocker rubber fountain brushes.] 16 pages.

Webster Manufacturing Co., Chicago and New York.=Belt Conveying appliances. Catalog No. 21. 76 pages.

Tredair Rubber Co., Boston.=Tred-Air Rubber Heel. 4 pages. Tred-Air Heel Cushions. 4 pages.

De Vilbiss Manufacturing Co., Toledo, Ohio.=Atomizers, Nebulizers, Dental Syringes. 12 pages.

Vapor Shower Bath Co. Rochester, New York.=A Story of the Improved "Perfection" Bath. 20 pages.

OUTING OF THE NEW ENGLAND RUBBER CLUB.

THE Midsummer Outing of the New England Rubber Club occurred on Tuesday, July 26, when the association became for the third time the guests of the Country Club, at Brookline, Massachusetts. The day was perfect, although the morning hours were showery, and at one time there was a prospect of rain. The members and their guests assembled early in the day at the Hotel Touraine, Boston, where 17 automobiles were in waiting to convey a party of about 100 to the beautiful Clyde Park, where the Country Club is located. The automobile run through the Fenway gave the out of town members a splendid opportunity to view the park system of Massachusetts. The rubber men had already learned to appreciate fully what the magnificently equipped Country Club offers in the way of beautiful surroundings, opportunities for athletic sports of all kinds, and the great hospitable mansion provided with all creature comforts.

On arriving at their destination, therefore, the members and their guests immediately made themselves at home, and prepared for the enjoyment of the program for the afternoon and evening, which had been provided by the various committees of the Rubber Club. In all 125 persons participated in the day's enjoyment, of whom 107 made the automobile run through Brookline. It appears that more than half the members of the Club attended, although this is the period in the year when many are away at their summer cottages, or otherwise availing themselves of a summer respite from business. Of the total list, the secretary reports that less than a dozen failed to respond to the notice of the outing, indicating the lively interest of the members in the affairs of the Club.

The sports committee had prepared an excellent program and a majority of the members took advantage of it. There was golf and baseball and bowling on the green in the way of outdoor sports, while indoors provision was made for ping pong, billiards, pool, etc.

The golfers got off early in the day and had finished the eighteen holes by 4 o'clock, the scores, which appear further on, telling the whole story.

The principal feature of the day was the baseball game, between nines representing the manufacturers and selling agents, on one side, and the rubber importers and brokers on the other. The nines were made up as follows:

MANUFACTURERS.	IMPORTERS.
E. B. Pearson, 2b.	A. W. Stedman, s.s.
N. L. Greene, 1b.	E. E. Wadbrook, 1b.
W. E. Barker, p.	E. G. Chadwick, c.f.
F. D. Balderston, 3b.	W. J. Kelley, c.
O. A. Barnard, s.s.	J. Kiley, p.
W. H. Palmer, 1 f.	J. F. Dunbar, 2b.
W. F. Stevens, c.f.	W. C. Coleman, r.f.
G. H. Mayo, r.f.	R. E. Paine, 3b.
H. P. Allen, c.	G. E. Habick, 1 f.

The Importers faced Barker with Stedman the first man up. He retired on strikes, after which followed a miscellaneous program in which two runs were scored. In their turn at the bat, the Manufacturers scored four runs, and from that time on they had an easy time of it and won by 14 to 5. Stedman appeared on the field with his little boy's baseball outfit, sewed upon a business suit which, while adding to his picturesqueness, somewhat handicapped him in making fast plays. President Apsley, with a red, white, and blue sunshade, kept tabs on the strikes and balls behind the pitchers. His decisions were never for a moment questioned, except once when Kelley,

burlesquing the tough professional, delighted the onlookers by vigorously condemning a close ruling.

THE SCORE.

Manufacturers.....	4	0	0	2	4	4	0—14.
Importers.....	2	1	0	0	1	1	0—5.

Batteries—Manufacturers: Barker and Allen; Importers, Kiley and Kelley.

The bowling was on the greens directly in front of the clubhouse, enabling those who did not wish to play to watch the ancient game from the piazza. Fully 30 were on the greens at one time, either watching or indulging in the sport. No scores were kept; at least the winners requested that none be published, out of deference to the feelings of those who lost.

Following the field games, the banquet took place at 7 o'clock two rooms being utilized and an additional table spread on the broad piazza. All the guests were comfortably seated and the dinner set before them was one of the best in the history of the Club. The orchestra of the Lynn Cadet Band, under the direction of S. S. Lurvey, rendered a choice program during the hour and a half devoted to the dinner, interspersed with the singing of popular selections by members of the Club.

Dinner finished, President L. D. Apsley called upon Mr. W. E. Barker, chairman of the committee on sports, who in a jovial speech named the winners of the day's games and presented the prizes. Each of the fortunate ones stepped to the head table and received the trophy to which he was entitled, amid a salvo of cheers. The prize winners were Messrs. F. D. Balderston, W. E. Barker, F. H. Jones, E. H. Clapp, W. J. Kelley, and S. L. Gillette.

The golf scores follow:

CLASS A.	Gross.	Handicap.	Net.	CLASS B.	Gross.	Handicap.	Net.
F. D. Balderston	95	15	80	E. H. Clapp....	97	18	75
W. E. Barker...	98	16	82	W. J. Kelley....	107	18	89
F. H. Jones....	91	8	83	S. L. Gillette....	102	10	92
J. F. Dunbar....	104	18	86	O. A. Barnard..	96	2	94
H. E. Mason...	95	8	87	N. L. Green....	110	10	100
E. E. Wadbrook.	104	16	88	G. E. Habick....	134	18	116

No cards—J. E. Page, W. H. Gleason.

GUESTS.	Gross.	Handicap.	Net.
L. T. Sawyer....	94	18	72
Andy Highlands.	79	6	73
George C. Dutton	81	6	75
A. G. Wood....	103	28	75
E. Kempshall...	91	16	75
A. L. Johnson..	88	8	80
N. H. Seeley...	98	14	84
John Abbott....	102	14	88
A. L. Aldrich....	118	28	90
J. H. Doyle....	101	10	91

No cards—G. W. R. Hill, M. C. Bourne and W. E. Page.

A vote of thanks was tendered to the Country Club, and after singing "America" the members dispersed, enthusiastic over the success of their outing.

In the next issue of THE INDIA RUBBER WORLD will appear a fine picture of those who were present, grouped on the steps of the Country Club.

In addition to the 17 automobiles furnished by a Boston company for the use of the Club, the following members put their private cars in commission: Arthur W. Stedman, two; William H. Mayo, two; Harry U. True, Eugene H. Clapp, Dr. J. C. Stedman, George R. Alley. By special request of the board of governors of the Country Club, there were no daily newspaper reports of the outing, but this request did not apply to trade papers.

RUSSIAN TAX ON RUBBER SCRAP.

It appears that the decree of the Russian government, imposing an export duty on rubber scrap, to which THE INDIA RUBBER WORLD has referred more than once, has gone into effect. It forms a part of the new Russian customs tariff confirmed by the Emperor on January 13, 1903, with a view to its going into effect when the occasion might arise. THE INDIA RUBBER WORLD is in receipt of the *Odessa District Gazette*, an official publication for the political district of which Odessa (Russia) is the capital, of the date of June 15, 1904 (corresponding to June 27, Western time), stating that on April 12 the Emperor ordered that the new tariff be put in force. While the new bill thus became a law on April 12, it could not be enforced in any district until officially published therein, and the publication above alluded to renders the law valid as regards Odessa, the port whence very large exports of rubber scrap are made. It may be added that early in July importers in New York became aware that an export duty was being levied on rubber scrap at Riga, a port on the Baltic sea. For several months certain importers at New York had included in their contracts for delivery of Russian scrap rubber a stipulation that the same should be cancelled by the taking effect of the Russian export duty.

The rate of the duty is 1 ruble 50 copecks per Russian pood [=36 pounds], being equivalent to about \$21.46 cents per 1000 pounds, or a little over 2½ cents per pound.

The opinion prevails at New York that the effect of the duty will be not only to render prices for Russian scrap firmer, but to advance prices so soon as a revival of demand, after the summer months, leads to a resumption of imports on an active scale. It is not felt that the total amount of the duty will be added to the import prices of Russian scrap, but certainly a portion of it, and probably half. It is considered that foreign scrap is a necessity, and, therefore, that enough must be paid for it to render its collection profitable. Doubts are expressed whether the collection of much of the scrap now exported from Russia would afford any profit if the tax of 2½ cents a pound were paid by the exporter.

The following table indicates the total imports of rubber scrap into the United States for fiscal years ending June 30, and also the amounts direct from Russia. The table also specifies the imports from Germany, a large portion of which are known to originate in Russia, the figures denoting pounds:

	1899-1900.	1900-01.	1901-02.	1902-03.
Total Imports.....	19,093,547	15,235,235	22,991,900	24,659,394
From Russia.....	5,047,516	6,212,705	8,536,237	10,454,897
From Germany.....	9,810,311	5,797,120	8,716,907	7,290,920

From the above figures it will appear that Russia is in a position to derive a handsome income from her exports of rubber scrap, considering that the rate equals \$21.458.30 per million pounds. It is possible that, in view of the new conditions, there may be larger direct shipments to the United States in future, instead of via German ports.

AKRON AS A RUBBER CENTER.

AN unnamed writer in the New York *Herald* of July 17, in a lengthy article on the rubber industry, devotes considerable space to the city of Akron, Ohio, as one of the largest rubber centers in the world. The B. F. Goodrich Co.'s factory is mentioned as the pioneer rubber works west of the Alleghany mountains, and its growth is recounted from the time when it found sufficient room "in a little one story building which could be completely hidden in the firm's present large factory."

"As the business of this pioneer company increased," the writer continues, "other wide awake men became interested in the manufacture of rubber goods, and as the demand grew more and more capital was invested, until at present there are twenty-three rubber factories there, and Akron is known far and wide as the 'Rubber City.'"

"Many people wonder what natural advantages Akron offers as a home for rubber factories, and there can be but one answer—there are none. It is an inland city, and every pound of rubber used must be shipped there from the importers in seaport cities. Labor there is no cheaper than in other places. The fact of the matter is that rubber manufacturers realize the importance of locating in a city where they may get skilled labor without having to import it.

"A large majority of the workmen in rubber factories are adepts at the business, and when rubber factories get a rush order there is an instant demand for men of this class. It will be readily seen that it is a physical impossibility to secure skilled workmen from other cities for a job of perhaps a month's duration, so the manufacturers, as a rule, locate their plants in a city where they are assured of skilled workers the year round.

"When one factory is without orders it lays off its men, and other factories pick them up. Thus a skilled rubber worker is always assured of a position when he lives in a city of many rubber factories. An instance of the practical working of this law of supply and demand occurred in the spring of 1903. The plant of the India Rubber Co., of Akron, caught fire one afternoon about 3 o'clock, and was totally destroyed, throwing all of its employes out of work, but even while the firemen were engaged in an effort to save the plant, representatives of the other rubber factories there were buttonholing the employes and engaging their services.

"More than 400 of them were again at work the next morning. Two days later rubber men from the East and West went to Akron to secure workmen from the destroyed plant, only to find that they had been eagerly snapped up by Akron manufacturers and could not be induced to leave the city."

ARTIFICIAL LIMBS MADE IN JAPAN.

WHATEVER artificial limbs the Japanese may require as a result of the war now in progress with Russia will be bought from their own makers, in the opinion of an American manufacturer interviewed by the New York *Sun*. This manufacturer, apparently A. A. Marks, of New York, stated that his house had ceased to receive any orders from Japan, where the artificial limbs made by him had been imitated in every detail. Even the Marks catalogue, an extensive volume, had been translated into Japanese, and, with the illustrations reproduced, was made to do duty in advertising the Japan-made artificial limbs.

"And now," said the American, "with artificial limbs made in their own country, the Japanese will buy no other. For they are an intensely patriotic people, and however good ours may be, and whether their own may be good or bad, the Japanese requiring an artificial limb will buy one only of Japanese make."

CHICLE AND CHEWING GUM.—The import for consumption in the United States in a single year of more than 3,000,000 pounds of Chicle has led to conjectures as to the number of pieces of chewing gum this weight of material would yield. But it appears that Chicle is far from constituting the chewing gums of commerce. Thus the *Druggists' Circular* gives a formula for chewing gum, using Chicle as a base, in which the latter substance forms but 13½ per cent. of the mass, by weight.

NEWS OF THE AMERICAN RUBBER TRADE.

THE VICTOR RUBBER CO. REORGANIZED.

THE rubber factory at Snyderville, established and operated for a number of years by The Victor Rubber Co. (Springfield, Ohio), has been acquired by a new corporation, organized under Ohio laws, with the same name.

The new company assumed control on July 12, on which date the first meeting of the corporation was held and the following board elected: Henry H. Durr, Daniel H. Snyder, John W. Pohlman, H. J. Robben, and J. S. Holliday. The following officers were then elected:

President—HENRY H. DURR.
Vice President—DANIEL H. SNYDER.
Secretary—JOHN W. POHLMAN.
Treasurer—H. J. ROBBEN.

Mr. Durr has been for several years connected with the Consolidated Rubber Tire Co., latterly traveling for them, with headquarters at Akron, Ohio. He is reported to be the largest stockholder in the new company. President Durr informed THE INDIA RUBBER WORLD on July 13: "The company has commenced partial operation and expects to be in complete operation shortly after August 1."

UNITED STATES RUBBER CO.—DIVIDEND.

THE board of directors, at a meeting on July 7, declared a dividend of 1½ per cent. on the preferred stock of the company from the net earnings for the fiscal year beginning April 1, to stockholders of record on August 31, payable September 15. This is the second dividend of 1½ per cent. declared since the suspension of dividends in 1901, the first having been paid on June 15 last. The forthcoming dividend will require \$352,882.50. A statement has emanated from the offices of the company that the net earnings for the first quarter of the current fiscal year exceeded by about \$500,000 the amount needed for the dividend. The various factories have been run at full capacity for most of the time.

RUBBER PLANT FOR AN ASBESTOS WORKS.

THE Keasbey & Mattison Co. (Ambler, Pennsylvania), extensive manufacturers of a great variety of asbestos products, are about to install a plant for working the rubber utilized in some of their asbestos packings, instead of buying the same from rubber manufacturers. Hitherto there has been no American asbestos goods factory with its rubber department, although in Europe the manufacture of asbestos and rubber products is carried on together in a number of establishments.

CHEAP SUBSTITUTES FOR RUBBER STAMPS.

THE stamps of printers' roller composition used by the United States postal department are supplied by Benjamin Chambers, of Lodge, Virginia, who has been a successful bidder on such goods for several years. Among the contracts awarded by the department to Mr. Chambers for the fiscal year beginning July 1 was one for 3000 composition stamps at 36 cents per dozen, the charge not including the brass sockets for holding the stamps, and the molds being supplied by the government.

RUBBER MEN HAVE A HANDSOME DINING HALL.

AN officers' dining hall has been opened in the main office building of the Hartford Rubber Works Co. (Hartford, Connecticut). It is a commodious room on the second floor of the building, and tastefully decorated, and will add greatly to the convenience of those for whom it has been designed, besides facilitating business by providing a daily opportunity for the

department heads to come together. Such an institution is an innovation in Hartford, and it is said to be regarded with much interest by other manufacturers in that city.

MITZEL RUBBER CO. TO MOVE.

THE Mitzel Rubber Co. (Akron, Ohio), engaged since the beginning of the year in making seamless and dipped rubber goods, in which they have been so successful as to have outgrown already their original premises, have accepted a favorable proposition from the town of Carrollton, Ohio, for the location of the plant there. The company is to be incorporated shortly, with an increase in capital to permit of the production of a full line of rubber goods. The amount of capital is mentioned as \$100,000. The president and treasurer is to be Harvey F. Mitzel, the founder of the business, and who until last autumn was general manager of the Pure Gum Specialty Co. (Barberton, Ohio). The Mitzel company will continue to maintain their office at Akron. They are now receiving estimates on a line of rubber machinery for their new requirements, and have plans made for a two story factory building, 180×40 feet, and also for an additional building to be erected a little later.

RUBBER MACHINERY PRODUCTION AT AKRON.

ALEXANDER ADAMSON (Akron, Ohio) has been busy of late with rubber factory machinery. Recent orders embrace considerable work for the new Alkali Rubber Co., of Akron, a large order for molds from the Diamond Rubber Co., a second 44"×44" press for the Swinehart Clincher Tire and Rubber Co., a 42" wrapping machine for the Dayton Rubber Co., a 10"×24" mixer and a tubing machine for the N Tire Co., of Chicago, and an experimental mill and calender for the Akron Dental Rubber Co. The Adamson foundry is new in the mill and calender line, but this work is contemplated from now on, with a gradual increase in the size of machines produced. There has been produced at this plant recently an electric safety clutch, particularly adapted for machinery such as is used in rubber factories, and it is likely to prove of interest to the rubber trade.

GOOD RECORD OF "WON'T SLIP" TIRES.

C. J. BAILEY & CO. (Boston) have received a strong testimonial in behalf of their "Won't Slip" tire from A. E. Morrison, the winner of several recent contests in mountain climbing in automobiles. At Bretton Woods, New Hampshire, on July 11, he entered a 24 horsepower Peerless touring car in a mountain climb, where the total rise was 6300 feet in eight miles, the grade in some cases being 23 per cent., and won by a margin of 8 minutes. The tires used were 34×4 inch Bailey "Won't Slip."

MANUFACTURE OF RUBBER BALLOONS.

THE demand for toy rubber balloons, rubber balloons for advertising purposes, and such like goods, though it has become considerable in the United States, is still supplied for the most part from Europe. An estimate by one firm in New York is that the imports of rubber "novelties," into the United States reach an annual value in the neighborhood of \$500,000, though of course this figure does not relate to balloons alone. It appears that the manufacture of rubber balloons in this country, though it has been attempted in a number of cases, has been confined thus far to a single establishment, and that not on a

large scale, the total output of which, in this line, is marketed by a New York notion house. The rubber used in these balloons is imported in the form of cut sheet, from Manchester, England.

RUBBER COMPANY IN TRENTON SUED.

WILLIAM H. SKIRM, JR., began suit in the United States circuit court at Trenton, New Jersey, on July 20, against the Empire Rubber Manufacturing Co., to recover \$20,000, claimed to be due him and unpaid, for money loaned and for the following items:

Dividend on 311 shares of the company's stock, declared August 4, 1902—10 per cent. for the preceding six months.	\$3,110.00
Salary as secretary and agent of the company, April 1 to May 10, 1903	444 44
Sixty shares of Campbell Web Co. transferred to Edward F. O'Brien at the instance of the Empire company, August 16, 1902	5,000.00
Interest on the above items to July 14, 1904	913 84
Total	\$9,468.28

GOOD RUBBER FOOTWEAR TRADE IN CANADA.

THE rubber season thus far has been one of the most satisfactory in the history of the business [says the *Canadian Shoe and Leather Journal*, for July]. The heavy trade done in rubbers last winter and spring cleaned up stocks to an extent never accomplished before, and retailers took heart and have bought liberally. The possibility of a further reduction of the discount had the effect of quickening the demand, and thus early orders have been very large this year. The elimination of jobs and the removal of the possibility of auctions have further cleared the situation, with the result that the rubber business to-day is in a position that could scarcely be conceived four or five years ago. The retail trade are also securing better profits, and whereas the rubber trade was once considered the rag of the shoe business, it is now considered a paying department. This is most satisfactory to all concerned.

IMPROVED STITCHED CANVAS BELTING.

A SPECIALTY of the Sawyer Belting Co. (East Cambridge, Massachusetts) is the stitched canvas belting which they have been making with great success for the past ten years. This belting is made from duck woven expressly for the company and constructed so as to give the greatest possible strength and the least possible stretch. The belts are stitched with strong cord in rows $\frac{1}{4}$ inch apart, each row being perfectly straight the entire length of the belt. This adds greatly to the strength and insures a smooth and even surface and increased traction power. These belts are thoroughly stretched before leaving the factory and run successfully where other belts fail. They are specially adapted for woolen mills, dye works, rolling mills, packing houses, brickyards, saw mills, paper mills, bleacheries, threshers, etc.

VERDICT FOR A. W. FABER.

[See THE INDIA RUBBER WORLD, June 1 1904—page 320.]

IN the United States circuit court for the southern district of New York, on July 19, in the suit of A. W. Faber v. J. Eberhard Faber, heard before Judge Ray, it was ordered that the defendant be perpetually enjoined from making, selling, or advertising any lead pencils, erasive rubber, or rubber bands marked "Faber" or "Faber Rubber Co." or by any other designation employing the word "Faber," without the prefix "Eberhard" or "John E." or "J. Eberhard." Also, that the defendant make an accounting of any goods in his possession marked in such manner as might convey the idea that they were made by the house of A. W. Faber, and that the complainant recover of the defendant all damages which he may have sustained from the use of the name "Faber" complained of.

HARTFORD RUBBER WORKS CO.

THE annual conference of the officers, branch managers, and traveling representatives of this company has now become a much appreciated fixture in the policy of the company. It occurred this year on July 18-20, being more largely attended than in any former year. On July 19 the annual meeting of the company took place, resulting in the reelection of the official board named in this paper last month [page 356]. Altogether, the attendance at the conference was as follows:

OFFICIAL BOARD.

C. H. Dale, President.
William Seward, Jr., Vice President.
Justus D. Anderson, Vice President.
Charles A. Hunter, Vice President and Director of Manufacturing.
James W. Gilson, Secretary and Treasurer.
Henry Plow, Assistant Secretary and Treasurer.
J. E. Tourtellotte, General Factory Manager.
H. W. Bigelow, Superintendent.
J. P. Krogh, Chief Accountant and Credits.
W. H. Whalen, General Purchasing Agent.
C. B. Whittelsey, General Storekeeper.
Stephen Roberts, Advertising Agent.

BRANCH MANAGERS.

New York—E. S. Benson.
New York—uptown—E. S. Roe.
Boston—E. R. Benson.
Philadelphia—Franklin Kesser.
Buffalo—James How.
Cleveland—J. B. Kavanaugh.
Detroit—E. E. McMaster.
Chicago—S. E. Gillard.
Minneapolis—W. C. Dawdy.
Denver—H. E. Field.
San Francisco—M. J. Tansey.
Los Angeles—H. O. Harrison.

SALESMEN.

E. S. Edwards, special automobile tire representative.
R. Clunan—Connecticut, Vermont, Massachusetts.
H. Severance—Maine, New Hampshire, Rhode Island, eastern Massachusetts.
H. Snyder—New York city and vicinity.
B. Snowman—New York state.
R. H. La Porte—Pennsylvania, Jersey, Maryland, Virginia.
A. W. Kirk—South.
D. W. Shattuck—Missouri, Kansas, Nebraska, Dakotas, Iowa.
A. H. Wikoff—Indiana, Illinois, Kentucky.
C. S. Monson—Ohio.
C. C. Harbridge—Chicago and Wisconsin.

ALSO.

M. C. Stokes and A. O. Holroyd, of the Correspondence Department at Home Office.

Vice President J. D. Anderson has been designated manager of the company's New York branch, to succeed Robert P. Parker, with headquarters for the present at No. 97 Chambers street. The scope of the position has been enlarged, Mr. Anderson having charge of the company's sales in New York, Pennsylvania, Delaware, Maryland, Virginia, and West Virginia.

NEW YORK STOCK EXCHANGE TRANSACTIONS.

UNITED States Rubber Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending June 25	50	16 $\frac{1}{2}$	16 $\frac{1}{2}$	300	66 $\frac{1}{4}$	66
Week ending July 1	810	16 $\frac{1}{2}$	16	1,225	56 $\frac{1}{8}$	65 $\frac{1}{2}$
Week ending July 9	2,060	17 $\frac{1}{4}$	16	4,400	68 $\frac{1}{4}$	65 $\frac{3}{8}$
Week ending July 16	1,895	17 $\frac{3}{4}$	16 $\frac{3}{4}$	4,337	72 $\frac{3}{8}$	68
Week ending July 23	10,195	19 $\frac{3}{8}$	18	3,277	78 $\frac{1}{2}$	73 $\frac{1}{4}$

RUBBER Goods Manufacturing Co.:

DATES.	COMMON.			PREFERRED.		
	Sales.	High.	Low.	Sales.	High.	Low.
Week ending June 25	200	15 $\frac{1}{2}$	15 $\frac{1}{8}$	200	77 $\frac{1}{2}$	77 $\frac{1}{2}$
Week ending July 1	200	16 $\frac{1}{4}$	16	120	78	78
Week ending July 9	300	17 $\frac{1}{4}$	16	180	77 $\frac{1}{2}$	77 $\frac{1}{2}$
Week ending July 16	1,860	18	16	200	78	77 $\frac{1}{4}$
Week ending July 23	3,800	19 $\frac{3}{8}$	17 $\frac{3}{8}$	875	79 $\frac{1}{2}$	78 $\frac{1}{8}$

NEW INCORPORATIONS.

THE Victor Rubber Co. (Springfield, Ohio), July 2, 1904, under Ohio laws, to manufacture rubber goods; capital, \$100,000. Incorporators: Joseph A. Niehaus, Joseph Rielog, John W. Pohlman, E. P. Lamping, R. C. Cronin.

=**United Rubber Sole Shoe Co.**, June 30, 1904, under Massachusetts laws; capital authorized, \$600,000, represented as paid in by application for United States patent for rubber soling boots and shoes. Fayette W. Wheeler, Malden, Mass., president; Reuben T. Robinson, Cambridge, Mass., treasurer. Mr. Wheeler, a lawyer with offices in Boston, advises **THE INDIA RUBBER WORLD** that the company are not yet prepared to make their plans public.

=**The Alfred H. Smith Co.**, July 6, 1904, under New York laws; capital, \$125,000. To continue the business of the late Alfred H. Smith, dealer in toilet articles, No. 84 Chambersstreet New York, including importation of rubber sponges. Incorporators: S. D. Smith, R. H. Smith, N. M. Smyth.

TRADE NEWS NOTES.

At a meeting of the board of directors of L. Candee & Co. (New Haven, Connecticut), on July 7, the following officers were reelected: Henry L. Hotchkiss, president; H. Stuart Hotchkiss, vice president and secretary; George E. Bailey, treasurer.

=At the annual meeting of the Easthampton Rubber Thread Co. (Easthampton, Massachusetts), on June 21, L. S. Stowe was reelected president, Frederick T. Ryder treasurer, and F. W. Pitcher general manager.

=The Goodyear Rubber Co. have introduced on the market a line of fruit jar rings, labeled "Gold Seal," put up 1 dozen in a carton and packed 2 gross in a box.

=The factory of the Joseph Banigan Rubber Co., at Olneyville, Rhode Island, which has been closed since early in the month, is expected to resume operation on August 15.

=Mr. J. E. Spencer, until recently purchasing agent for the National Cash Register Co. (Dayton, Ohio), has been appointed manager of sales for the Mechanical Rubber Co., Chicago.

=The factory of the La Crosse Rubber Mills Co. (La Crosse, Wisconsin) resumed work on July 11 with a full force, after having been closed for two weeks to give the employees a vacation.

=The creditors of The Combination Rubber and Belting Co., bankrupt (Bloomfield, New Jersey), early in the month received notice from the referee in bankruptcy that a first dividend, of not less than 20 per cent. on their claims, would be declared on July 19.

=The Duckwall-Harman Rubber and Supply Co. (Indianapolis, Indiana), have increased their capital stock from \$15,000 to \$25,000. The business of the company dates from April, 1899, and was incorporated in 1900 with \$8500 capital, which sum has been increased successively to the amount named above. The company are selling agents in their territory for the rubber products of the Whitman & Barnes Manufacturing Co. (Akron, Ohio).

=There is a newspaper report to the effect that Frank A. Magowan, sometime of the Trenton rubber industry, was at Milltown, New Jersey, about the middle of July, holding "conferences" with citizens of that place relative to reorganizing the late Milltown India Rubber Co.

=There is no rubber in the "Vulcanite Rubber Roofing" offered by the Farley & Loetscher Manufacturing Co. (Dubuque, Iowa). It is made of wool felt, densely compressed, and saturated and coated with a special compound, to render it fireproof against all ordinary roof exposures.

=The Mason Regulator Co. (Boston) have issued a new price list of parts for all sizes of Mason Reducing Valves, a copy of which they will be pleased to mail on application.

=Work was resumed on July 18, at the factory of the Lambertville Rubber Co. (Lambertville, New Jersey), after a brief shutdown for stocktaking and repairs. The mill is reported to be well supplied with orders.

=The directors of the India Rubber and Gutta Percha Insulating Co. (Yonkers, New York) on July 1, declared a dividend of 2½ per cent., payable July 11.

=The Sweet Tire and Rubber Co. (Batavia, New York) have added to their output pump valves and rubber tired truck wheels. W. F. Stearns has been made superintendent of their factory.

=The Union Rubber Co. (Akron, Ohio), jobbers of rubber goods and engineers' supplies, have filed with the secretary of state of Ohio a certificate of reduction of their capital stock from \$50,000 to \$10,000.

=F. R. Müller & Co., long established as India-rubber and Gutta-percha merchants, at Glasgow, London, and Liverpool, have opened a branch house in New York, at No. 108 Water street, which will be in charge of Mr. Wallace L. Gough.

=Boston Rubber Garment Workers' Union No. 174 on July 3 ordered a strike of the members of the union employed by the Coöperative Rubber Co., No. 175 Hanover street, and at a later meeting assessed members who are at work elsewhere 5 per cent. of their wages for the benefit of the strikers.—Union No. 174 on July 20 elected Jacob Glazer president, Samuel Starr vice president, Gabriel Jacobson recording secretary, Edward Rosen financial secretary, George Garner treasurer, and Samuel Schneider sergeant at arms.

=In an interview printed in the *Hartford Post*, with E. D. Robbins, mentioned as counsel for Lewis D. Parker, until lately president of the Hartford Rubber Works Co., it was intimated that legal proceedings would be brought in behalf of his client to recover damages for his deposition from office. A later issue of the *Post* (July 13) reports the matter "in abeyance for the present and probably for some time in the future."

=W. C. Coleman Co., dealers in scrap rubber and second hand rubber machinery, have removed to Setauket, Long Island, New York, where they have largely more space than was available at their New York city location. They were recently the purchasers of the crude rubber and rubber scrap included in the effects of the North American Rubber Co., in liquidation. Another recent purchase of scrap by them amounted to 400,000 pounds, which is a large transaction in scrap when not including old shoes.

=The Manhattan Web Co., makers of elastic webbing, at Newport, Rhode Island, have won a suit against the Aquidneck National Bank, of that city, under unusual circumstances. Having been a New York corporation, the company was reorganized in 1899 under a New Jersey charter, continuing as before to do their banking business with the Aquidneck institution. On February 30, 1900, the bank held notes against the Manhattan Web Co. of New York, and against E. Read Goodridge, its treasurer, aggregating \$7750, which were paid on that date with a check on the same bank signed by Goodridge as treasurer of the reorganized concern. Shortly afterward a new treasurer was elected and the company's account with the bank was closed. About a year ago the Manhattan Web Co. of New Jersey brought suit against the bank on the ground that their treasurer in 1900 (Goodridge) had no authority to draw on their account to pay his own debts or those of the old corporation, and on June 14 last a jury rendered a verdict in favor of the company for the amount claimed and interest—\$9758.50.

WHAT "SERNAMBY" MEANS.

IN writing of the preparation of Pará rubber, the United States consul at Pará, Colonel Louis H. Aymé, says:

"The sernamby is the self coagulated rubber which remains in the cups into which the *latex* exudes. When the milk is collected the tapper pours out the liquid contents into a large receptacle that he carries for that purpose. Then he sweeps out the interior of the cup with his forefinger to get what, though liquid, remains in the cup. There is still a film of partly coagulated milk in the cup. This is allowed to remain for several days. There result a number of curious little cakes of self coagulated *latex* that often resemble mussels and hence the name 'sernamby,' which in an Indian tongue means 'mussel.' These little cakes are pressed together and adhere to each other. Sometimes a ball is formed; more often it is pressed in a box. To the cakes are added strips and films from the trees. Careful collectors do not, however, strip the film from the incision made into the bark and which always extends to the wood—usually indeed into the wood—as this film protects the tree from a borer that would otherwise lay its eggs in the cuts."

RUBBER DAM FOR REDUCING FLESH.

THERE is a new method of flesh reducing which is intended only for people addicted to athletics. One of its features is the fact that one may follow it without attracting attention from one's friends.

The graceful women one sees at Newport riding along Ocean avenue, playing tennis at the Casino, or on the links at the golf club may all the time be taking this method of getting thin, although there is no trace of it in their appearance. Men who ride cross-country or play polo may be simultaneously following this method of flesh reduction, although nobody would suspect it.

It is a fact that some of the women of New York smart society who are noted for their good looks and athletic figures, are most devoted to this method of keeping their weight down. Among men its advocates are those conspicuous for their athletic figures and their strength.

This new method of melting away the too solid pounds is described as the "rubber dam" system. A rubber dam is the bit of rubber fitted by dentists about a tooth on which they are working, to keep away saliva and other moisture. The rubber from which such dams are made comes in bolts about two-thirds of a yard wide. It is a hard rubber cloth and is sold by the yard in one or two drug stores.

Persons who want to take off flesh buy four or five yards of this material, wrap it tightly about the body, and to keep it in place put on a tight fitting suit of silk or woollen underwear, preferably of the kind called the combination. This is only the first stage of the rubber dam reduction cure. The hardest part is still to come. Once the rubber is in place there must come many swift sets of tennis, hard horseback riding, tether ball playing, or some equally exacting sport. The use of the rubber wrappings assists the action of the skin, makes the perspiration much freer, and has been known to take off as much as five or six pounds in one day.

Women usually wrap the rubber about the body from the chest down to the knees. Many women are most interested in getting rid of their hips, as they are likely to show stoutness first there, and the big hipped woman is not at all in the style nowadays. Such women wrap the rubber dam several times around the hips and waist to devote their energies to that particular part of the body.

In the same way, men who think they are getting too heavy over the hips or maybe over the abdomen wrap the rubber only about those parts that they are anxious to attack.

The treatment requires nothing in the way of diet, although it will of course be very much more effective if fattening foods and liquids are avoided. But the rubber dam devotees do not, as a rule, follow any other course in attempting to get thin.

The treatment is not expensive. The original cost of the rubber will not exceed \$4 in any case, and it can be used time and time again.

There used to be complaints that patients under the treatment might take cold, but that happens rarely if after the exercise they go home immediately and take a bath. For persons who ride or play tennis the new treatment is splendidly effective, but it is of no value to those not addicted to athletics.—*New York Sun*.

MORE COLORADO RUBBER NEWS.

PARA, as a rubber center, is threatened with a rival in the city of Buena Vista, Routt county, Colorado—in the mountains, near the northwestern corner of that state—the home of the "rabbit brush" made famous as a rubber producer by so many conflicting discoverers. The Pueblo *Chieftain* estimates that "this section of the country alone can supply rubber for the world for the next 25 years," though it fails to say where rubber is to come from afterwards.

The American Crude Rubber Co. promise to erect at Buena Vista a factory for the extraction of rubber from the marvelous shrubs, to be operated by electric power, in connection with which they are to light the city and operate an electric railway, the necessary franchises having been granted by the city.

Buena Vista is headquarters for a new company, the Colorado Rubber and Improvement Co., organized by citizens of Columbia, Indiana, under the laws of Colorado, the incorporation papers having been filed May 23. The company is capitalized at \$50,000, and was expected to begin producing rubber by July 1.

THE press very generally has printed the following despatch, regarding which THE INDIA RUBBER WORLD has received a number of inquiries:

CITY OF MEXICO, June 6.—Fernand Vivier, a Frenchman and an expert in rubber culture, has discovered a plant which yields abundant rubber. Tests of the plant demonstrate that no chemicals are needed, as it vulcanizes easily. There is already a large demand from New York for the product of the new discovery.

This report evidently is based upon an interview with Monsieur Vivier, in the *Mexican Herald* of June 1, written by a reporter not too well informed in regard to rubber. We should judge from the report, however, that the plant referred to is the one already mentioned in these pages by the local name of "guayule."

RUBBER SHOE PRODUCTION.—The annual report of the United States Rubber Co. stated the production of its factories during the last fiscal year at over 48,000,000 pairs. The Boston *News Bureau* had already estimated the capacity of these factories at 58,000,000 pairs, according to which it would appear that 83 per cent. of the capacity was employed. The *News Bureau* also estimated the capacity of the independent rubber shoe factories at 29,000,000 pairs per year, and assuming that 83 per cent. of the capacity was employed, these factories should have made 24,000,000 pairs during the past season, or a total of 72,000,000 pairs for the whole industry. The field is now open for any one else who cares to estimate.

CRITICISMS OF THE CONLEY REPORT.

IN the July issue of THE INDIA RUBBER WORLD some attention was given to an official report on "Rubber Culture in Mexico," by Mr. Edward M. Conley, of the United States consulate general at Mexico City, which report has received a wide circulation through the newspapers and called forth many comments. Several of the rubber plantation companies organized by American citizens have filed protests with the office at Washington through which the consular reports are published, and it may interest some of our readers to present here some specimen letters. The first is from Mr. Louis Kunz, general manager of the Mexican Tropical Planters' Co., and who has been interested in rubber in Mexico for some ten years:

WILLIAMSPORT, PA., July 2, 1904.

To the Honorable,
The Secretary of the Department of Commerce and Labor,
Washington, D. C.

DEAR SIR: Under date of June 14, 1904, your Department published *Daily Consular Reports* No. 1978, containing an article by Vice and Deputy Consul General Conley on "Rubber Culture in Mexico."

The avowed purpose of the report is to reply to many letters of inquiry addressed to the American consul in the City of Mexico, on the subject of rubber culture in Mexico, and Mr. Conley, in sweeping terms, condemns rubber culture and rubber planting companies without distinction.

The official character of a consular report demands that it be written by some one competent to deal with the subject undertaken, and that the subject be fairly treated; otherwise, such report would miss its object, namely, to disseminate honest and reliable information.

Mr. Conley undertook something which he certainly was not prepared to deal with intelligently.

It is perfectly true, that there are "fake" rubber companies whose methods cannot be condemned too strongly, but this does not justify Mr. Conley in denouncing rubber planters in general as rascals, and if he cared to go to the trouble to make the necessary investigations, he might easily have learned that some very substantial and reliable people, who are perhaps quite as capable as Mr. Conley of judging of the merits of the enterprise, have interested themselves in the planting of rubber.

It is evident from Mr. Conley's report that he depended for his information on a report published by the Department of Agriculture in 1900, of which Mr. O. F. Cook was the author, and random newspaper stories.

Mr. Conley failed to note that the Cook report referred to was published in 1900, and dealt primarily with the feasibility of rubber culture in Porto Rico, where neither *Hevea* nor *Castilloa* is indigenous, and therefore the report could have little bearing on rubber culture in Mexico, and he further failed to note that the Department of Agriculture issued a second report in October, 1903, after having sent Mr. Cook personally to make investigations in southern Mexico and Central America, and that in this later report Mr. Cook expresses himself as convinced that, under proper conditions, and with proper management, rubber culture will be a profitable business.

It would not have been difficult for Mr. Conley to ascertain the fact that there are many honest and reliable Americans in tropical Mexico, who began their investigations of the possibilities of rubber culture about twelve years ago, and as a result of their experiments rubber culture has been taken out of its experimental stages, and within the last five years planting on a commercial scale has been going on, and if Mr. Conley had cared to inform himself first handed, I am sure that many of the reliable planters would have been glad to give him or his representative an opportunity to fairly investigate the matter.

Incidentally, I wish to remark that in Ceylon, where the experimenting and planting began at an earlier date than in Mexico, there are already plantations paying larger returns on the investments and are a success in every way, and this was accomplished in a country where rubber is not indigenous, but the seed had to be imported from the western hemisphere.

An intelligent investigation of the subject will convince any one that there is nothing mythical about cultivated rubber trees, under proper conditions, producing rubber in paying quantities, and that these conditions are not difficult to meet where the tree is already indigenous.

The experiments referred to consisted in determining how best the tree might be reproduced, whether from seed or from cutting, whether the seed had best be sprouted in nurseries and the young plants then transplanted, or the seed planted where the tree was permanently to remain; whether the conditions under which the wild tree was found growing could be modified with benefit to the tree; at approximately what age the tree would become productive, and whether the extraction of *latex* in paying quantities would be injurious to the tree, and the best methods of extracting the *latex* and coagulating it into commercial rubber.

It is not my intention to assert that there is nothing more to be learned on the subject of rubber culture, but I do contend that there is sufficient evidence to justify the investments which are being honestly and intelligently made in rubber plantations.

It seems to be Mr. Conley's idea that rubber plantations can never compete with the wild trees. As a matter of fact, just the reverse is true, and if there shall ever come a time when plantation grown rubber and that taken from the wild trees come into competition with each other, the plantations will be able to undersell the wild product.

With regard to harvesting rubber from cultivated trees, Mr. Conley makes reference to an interview with Mr. Lionel de Pinto, of London, published in one of the newspapers, in which Mr. De Pinto said that upon the harvesting of the rubber would largely depend the success of rubber cultivation. I do not know whether Mr. De Pinto is correctly quoted, but in no case can he be said to have spoken for the whole rubber interests of Mexico.

The planters of Mexico are familiar with methods that are economical and entirely successful. All these consist simply in modifications of, and improvements on, the methods in use by the natives of Brazil, by which they have gathered thousands upon thousands of pounds annually for many years.

Mr. Conley's ignorance on the subject he attempts to discuss is nowhere more fully exemplified than when he attempts to call into question the means available for successfully coagulating the *latex*. The experimenting along these lines has simply consisted in improving on the methods employed by the natives, but if there were no other means available, the native methods would answer very well.

In view of the unsatisfactory manner in which Mr. Conley has handled this subject, and the injustice he has done to an enterprise in which many thousands of dollars of American money are invested, it seems to me that it would be only fair to your Department to make a proper investigation and correct the erroneous statements made by Mr. Conley.

As the matter now stands, your Department is in the position of contradicting a report made by the Department of Agriculture, with this difference, however, that the Department of Agriculture's report is made by an expert botanist who made his investigations on the ground, whereas the report emanating from your Department is fathered by a man who knew nothing about his subject.

I beg to apologize to you for this long letter, but having a vital interest in the subject under discussion and being a practical planter of twelve years' experience, I felt myself both justified and competent to take your report to task, and I trust you will give the matter the attention its importance entitles it to. Yours very truly,

LOUIS KUNZ.

* * *

A LETTER bearing upon the same subject, by Mr. Squire Garnsey, secretary of the Tehuantepec Rubber Culture Co., is reproduced herewith, with the omission of some references to recently published details regarding the company's plantation:

NEW YORK, July 7, 1904.

To the Honorable
The Secretary of Commerce and Labor,
Washington, D. C.

SIR: We have recently had called to our attention a report on "Rubber Culture in Mexico," by one Edward M. Conley, of the Mexican Consulate General, which appears in No. 1978 of the *Daily Consular*

Reports. This we have carefully read, and to us or any one else at all familiar with the rubber industry in Mexico, Mr. Conley's report betrays either dense ignorance of the subject matter of his report, or a wilful and malicious purpose to destroy the confidence of the American people in an industry which has every reason to be encouraged and every prospect of success, and in which large sums of American capital are legitimately invested.

We respectfully submit that if the industry is of sufficient importance to be reported upon at all, it is first entitled to investigation by one who is qualified to express an intelligent opinion. Certainly this Mr. Conley is not so qualified, and for a department of the government to publish and circulate, as an official report, any such aggregation of misstatements, is to utilize its powers to injure instead of promote the interests of American citizens.

We know not how other rubber planting companies feel upon this subject, but, speaking for ourselves, we beg to assure you that we shall welcome to our plantation at any time a competent representative of your honorable department, whose report we are sure will show the incorrectness of Mr. Conley's statements.

We respectfully assure your honorable department that we ask no favors or encouragement from any one, but we do seriously object to the alleged "reports" by such of the consular service as serve only to bring discredit upon their calling. Respectfully,

SQUIRE GARNSEY,
Secretary.

HOSE ON NEW YORK HARBOR BOATS.

THE recent disaster in the East river, New York, where over a thousand passengers on the steamer *Slocum* lost their lives by fire and drowning, was followed by a rigid inspection, by government employes, of the steamboats in New York harbor, from which it appears that conditions generally on the boats are better than on the ill fated *Slocum*. This applies to the fire hose on the boats, as well as to other equipment, though it appears from a report in the New York *Sun* that the cotton hose made a better showing than rubber. The captain of the steamer *Saratoga* is quoted as saying:

"These tests show just what my experience has taught me. Unlined cotton hose is the best for use on boats. It can be stowed away easier, is easier to get into action, and will wear longer. Fold up a coil of rubber lined hose as you have to on boats like this, and the rubber gets bad before you know it."

REVIEW OF THE CRUDE RUBBER MARKET.

HIGHER prices are prevailing for rubber at this writing than have ever before been quoted in this Journal—higher, indeed, than have ever been known in the trade, save in a single case, a good many years ago, when extreme figures resulted from a speculative movement which was bound to be short lived. To-day's prices, however, cannot reasonably be expected to decline so suddenly, or to so great an extent; they are the result of conditions of a more permanent and a more legitimate character.

It is hardly worth while to recount here the details of stocks and of consumption which have been indicated constantly in our pages, in view of which present prices are not a cause for surprise. It is true that the course of rubber prices is not always along the lines indicated by what is called the "statistical position" of the raw material, lower prices occurring at times with declining stocks, but this is, we believe, exceptional, if the whole visible supply of the world is considered.

The size of the Amazon river output—Pará rubber and Caucho—for the crop year ending June 30 has already been indicated, showing an unimportant increase over past years. The first month of the new season shows even less encourag-

ADDITIONAL TRADE NOTES.

DURING a storm on July 28 one of the buildings of the Vulcanized Rubber Co., at Morrisville, Pennsylvania, was struck by lightning, causing flames which were extinguished by the factory fire brigade, assisted by the town fire department, only after a loss amounting to \$10,000 had been caused. It was an old frame building used for the storage of scrap rubber, and the only one of the company's buildings not insured or provided with automatic sprinklers. Plans had been made already by the company for a new two story brick building for the storage of scrap.

=A good exhibit of Daniel's P. P. P. (packing) was made by the Quaker City Rubber Co., Coronation House, Lloyd's avenue, London, E. C., at the International Colliery Exhibition held in London, from June 25 to July 2.

=The Edward M. Caffall Waterproofing Co., incorporated during July under New York laws, with \$50,000 capital, has no relation to the waterproof clothing industry. The Caffall waterproofing compound has been applied to the Egyptian obelisk in Central Park, New York, as a preservative, and the idea is to apply it to stone work generally, where exposed to the elements.

PERSONAL MENTION.

MR. WILLIAM H. ACKEN, president of the New York Rubber Co., sailed on July 13, on the new White Star liner *Baltic*, for a vacation in Europe, to last about two months. He was accompanied by Mr. John P. Ryder, vice president of the company, who may remain in Berlin for a year or more.

=Mr. Hermann Müller, of F. R. Müller & Co., crude rubber merchants, of Glasgow, Scotland, recently paid his first visit to the United States, during which he saw a number of the principal rubber works.

SPORTS OF RUBBER MEN.

EMPLOYEES of the importing house of George Borgfeldt & Co. maintain a baseball team, which would be pleased to arrange games with other teams in the rubber trade. Applications may be made to C. H. Norton, manager, Nos. 48-50 West Fourth street, New York.

ing returns, arrivals at Pará during the first 28 days of July being reported at only 1000 tons, against an average of 1150 tons for the complete month of July for five years past. The future tendency of prices must be determined by the extent of the consuming demand, and there are not apparent any indications that this is to be less in the near future. In the United States it has been usual to expect a decline in general business activity just prior to a national political campaign, but nothing of the kind appears imminent in connection with the presidential contest now opening. Nor is there visible in Europe any evidence of an early decline in industrial activity, and, therefore, in the demand for rubber.

It is true that the figures referred to above relate only to Pará rubbers, and that prices of these sorts have in the past been modified by the output of lower grades. While our Antwerp statistics show some improvement in arrivals at that port during the present year, the figures still are lower than for past years, while we print on another page some predictions entitled to weight that the African output, as a whole, is on a decline.

As for prices realized at Antwerp last month, while the figures indicate a fall, the opinion continues to be expressed in Amer-

ica that, considering the condition of the rubber offered, the results were better than in the case of rubbers of the same intrinsic value at former sales.

Following is a statement of prices of Pará grades, one year ago, one month ago, and on July 30—the current date.

PARÁ.	Aug. 1, '03.	July 1, '04.	July 30.
Islands, fine, new.....	89@90	108@109	114@115
Islands, fine, old.....	93@94	109@110	none here
Upriver, fine, new.....	94@95	112@113	118@119
Upriver, fine, old.....	98@99	113@114	119@120
Islands, coarse, new.....	57@58	63@ 64	64@ 65
Islands, coarse, old.....	@	@	none here
Upriver, coarse, new.....	75@76	87@ 88	91@ 92
Upriver, coarse, old.....	@	88@ 89	none here
Caucho (Peruvian) sheet.....	59@60	66@ 67	68@ 69
Caucho (Peruvian) ball.....	71@72	76@ 77	77@ 78

The market for other sorts in New York, the advances on which have been less marked, is as follows:

AFRICAN.	CENTRALS.	
Sierra Leone, 1st quality.....	Esmeralda, sausage.....	74 @75
Massai, red.....	Guayaquil, strip.....	64 @65
Benguella.....	Nicaragua, scrap.....	74 @75
Cameroon ball.....	Panama, slab.....	57 @58
Accra flake.....	Mexican, scrap.....	72 @73
Lopori ball, prime.....	Mexican, slab.....	57 @58
Lopori strip, prime.....	Mangabeira, sheet.....	49 @57
Ikelemba.....	EAST INDIAN.	
Madagascar, pinky.....	Assam.....	86 @87
	Borneo.....	@

Late Pará cables quote:

	Per Kilo.		Per Kilo.
Islands, fine.....	6\$950	Upriver, fine.....	7\$750
Islands, coarse.....	3\$550	Upriver, coarse.....	5\$550
Exchange, 12 $\frac{3}{8}$ d.			

Last Manáos advices:

Upriver, fine.....	7\$800	Upriver, coarse.....	5\$400
Exchange, 12 $\frac{1}{8}$ d.			

NEW YORK RUBBER PRICES FOR JUNE (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine.....	1.11@1.14	89@93	70 @72
Upriver, coarse.....	87@ 90	70@74	55 @56
Islands, fine.....	1.08@1.11	85@89	65 @70
Islands, coarse.....	64@ 68	54@57	45 @46
Cametá, coarse.....	64@ 68	56@60	48 @52

Statistics of Para Rubber (Excluding Caucho).

	NEW YORK.		Total	Total	Total
	Fine and Medium.	Coarse.	1904.	1903.	1902.
Stocks, May 31..... tons	275	52 =	327	541	552
Arrivals, June.....	97	155 =	252	652	637
Aggregating.....	372	207 =	579	1103	1189
Deliveries, June.....	260	182 =	442	826	776
Stocks, June 30.....	112	25 =	137	367	413

LATE SMALL ADVERTISEMENTS.

MANAGER OR SUPERINTENDENT.—Position wanted as Manager or Superintendent by an experienced manufacturer. Familiar with compounding Hard and Soft Rubber; expert chemist; has manufactured all kinds of Mechanical Goods and Tires; competent to operate large plant or selling end; understands modern labor saving office methods and factory cost accounting; employed; highest credentials. Address R. E. A., care of THE INDIA RUBBER WORLD. [581]

CHEMIST.—Manufacturing Rubber Chemist who can make excellent Rubber Sponge wants to connect himself with concern where successful service will be appreciated. Address H. O. H., care of THE INDIA RUBBER WORLD. [616]

FOR SALE. One 20"x60" three chilled roll Calender, and two 16"x40" chilled roll Grinders, all on one line of shafting and in perfect order; also one "Jumbo" chilled roll Mill and Cracker, with their shafting. THOMAS F. STEVENSON, No. 120 Liberty street, New York. [618]

	PARÁ.			ENGLAND.		
	1904.	1903.	1902.	1904.	1903.	1902.
Stocks, May 31..... tons	195	115	89	440	1400	2075
Arrivals, June.....	1035	1770	1240	720	570	886
Aggregating.....	1230	1885	1320	1160	1970	2961
Deliveries, June.....	1055	1770	1255	575	650	818
Stocks, June 30.....	175	115	65	585	1320	2143

	1904.	1903.	1902.
World's visible supply, June 30..... tons	1506	2712	3272
Pará receipts, July 1 to June 30.....	25,925	26,546	26,456
Pará receipts of Caucho, same dates.....	4669	3204	3514
Afloat from Pará to United States, June 30.....	95	495	284
Afloat from Pará to Europe, June 30.....	511	415	367

Ceylon Rubber.

EXPORTS of cultivated rubber, mostly Pará variety, from Ceylon, from January 1 to June 27, 1904:

To Great Britain.....	pounds	30,950
" Germany.....		2,227
" Belgium.....		111
" United States.....		63

Total, five months.....		33,351
Total, same months of 1903.....		22,533

The total export of Ceylon rubber for three full years past has been:

	1901.	1902.	1903.
Pounds.....	7,392	21,168	41,684

Should the increase of this year's imports over those of 1903 continue throughout the year at the same rate, the total would amount to 60,000 pounds for 1904.

Liverpool.

WILLIAM WRIGHT & Co. report [July 1]:

Fine Pará.—The demand has been dull and prices have had a declining tendency, closing 1 $\frac{1}{2}$ d. per pound lower on spot and 2d. per pound forward. The estimates of receipts for June have not been realized, but will be made up during this month, and the prospects of a liberal supply of rubber for next crop are good. The sooner we reach a lower level of values the better for the trade.

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound—show no change from the last published prices, as follows:

Old Rubber Boots and Shoes—Domestic.....	5 $\frac{1}{2}$ @ 5 $\frac{1}{4}$
Do —Foreign.....	4 $\frac{1}{4}$ @ 4 $\frac{3}{8}$
Pneumatic Bicycle Tires.....	3 $\frac{1}{2}$ @ 4
Solid Rubber Wagon and Carriage Tires.....	6
White Trimmed Rubber.....	8 $\frac{1}{2}$ @ 8 $\frac{3}{4}$
Heavy Black Rubber.....	4
Air Brake Hose.....	2 $\frac{1}{4}$ @ 2 $\frac{3}{8}$
Fire and Large Hose.....	1 $\frac{3}{4}$ @ 1 $\frac{7}{8}$
Garden Hose.....	1 $\frac{3}{8}$ @ 1 $\frac{1}{2}$
Matting.....	3 $\frac{1}{4}$ @ 1

SALESMAN.—First class Mechanical Goods Salesman, good habits, excellent references, desires position with factory manufacturing strong and complete line. Commission basis; territory, Chicago and Western states, where I have good trade. Address T. H. F., care of THE INDIA RUBBER WORLD. [582]

WANTED.—Foreman (and possibly Assistant) to take charge of Hose Department of large Mechanical Rubber Manufacturing concern. Must be thoroughly conversant with construction and most up-to-date methods of making Air Brake, Steam and Suction Hose, and Rubber Lining Cotton Hose. Address MANUFACTURING, care of THE INDIA RUBBER WORLD. [615]

FOR SALE.—One or two processes for producing Rubber Substitute from a new and very cheap material never before used for this purpose. Will vulcanize with less rubber than any other substitute. Or would like capital to manufacture it into Soft or Hard Rubber Goods. Address H. S. T., care of THE INDIA RUBBER WORLD. [617]

London.

EDWARD TILL & Co. [July 1] report stocks:

	1904.	1903.	1902.
LONDON { Pará sorts..... tons	—	—	—
Borneo.....	29	19	122
Assam and Rangoon.....	9	7	10
Other sorts.....	268	198	428
Total.....	306	224	560
LIVERPOOL { Pará.....	587	1328	2051
Caucho.....	318	273	312
Other sorts.....	709	460	672
Total, United Kingdom.....	1920	2285	3595
Total, June 1.....	1667	2248	3687
Total, May 1.....	1644	2539	3788
Total, April 1.....	1367	2525	3326

PRICES PAID DURING JUNE.

	1904.	1903.	1902.
Pará fine, hard..	4/ 8 @ 4/10 1/4 3/10 @ 3/11 1/4 2/11 1/2 @ 2/11 3/4		
Do soft.....	4/ 7 1/2 @ 4/ 9 1/2 3/ 8 1/2 @ 3/10		
Negroheads, scrappy	3/ 7 1/2 @ 3/ 9 2/11 1/2 @ 3/ 2/ 4 @ 2/ 4 1/2		
Do Cameté.....	2/ 8 1/4 @ 2/10 1/2 2/ 5 @ 2/ 7 3/4 2/0 1/4 @ 2/ 0 1/2		
Bolivian.....	4/ 8 3/4 @ 4/10 1/4 No sales.		
Caucho ball.....	3/ 2 3/4 @ 3/ 4 1/2 2/11 @ 2/11 1/4 3/ @ 3 0 1/2		
Do slab.....	2/10 @ 2/11 2/ 4		

British Crude Rubber Statistics.

SIX MONTHS ENDING JUNE 30—OFFICIAL.

	1902.	1903.	1904.
Imports..... pounds	26,287,968	29,328,208	30,909,872
Exports.....	15,150,688	19,415,872	16,877,056
Net Imports.....	11,137,280	9,912,336	14,032,816

GUTTA-PERCHA.

	1902.	1903.	1904.
Imports..... pounds	5,746,832	2,758,672	1,287,440
Exports.....	697,088	423,248	352,912
Net Imports.....	5,049,744	2,335,324	934,528

Rubber Receipts at Manaus.

DURING June and twelve months of the crop season for three years [courtesy of Messrs. Witt & Co.]:

FROM—	JUNE.			JUNE-JULY.		
	1904.	1903.	1902.	1904.	1903.	1902.
Rio Purús—Acre. <i>tons</i>	30	26	77	5913	5938	6750
Rio Madeira.	40	57	88	2681	2306	2844
Rio Juruá.	34	48	54	3678	3608	3642
Rio Javary—Iquitos.	54	5	3	2273	1507	1304
Rio Solimões.	9	8	21	837	1372	1551
Rio Negro.	17	104	14	485	755	383
Total.	184	248	257	15,867	15,486	16,474
Caucho.	257	258	200	4057	3612	3485
Total.	441	506	457	19,924	19,098	19,959

MANAOS EXPORTS FIRST HALF 1904 (IN KILOGRAMS).

To—	Fine.	Medium.	Coarse.	Caucho.	Total.
New York... 3	165,325	716,161	827,353	1,039,515	5,748,354
Liverpool... 1,	379,825	219,159	428,473	1,460,133	3,487,590
*Continent..	888,187	99,639	171,510	383,337	1,542,673
Total...	5,433,337	1,034,959	1,427,336	2,882,985	10,778,617

[* Havre, Hamburg, and Antwerp.]

MANAOS EXPORTS BY FIRMS.

	Kilos.		Kilos.
Dusendschön & Co....	3,658,912	Marius & Levy.....	115,155
Witt & Co.....	2,869,145	Kahn, Pollack & Co...	92,719
A. H. Alden.....	1,058,434	Sundry shippers.....	374,793
Reeks & Astlett.....	688,352	Iquitos, transit.....	776,284
Neale & Staats.....	653,331	Total.....	10,778,617
J. H. Andresen, Succ...	296,210		
Denis Crouan & Co....	195,282		

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: In the sale by inscription of July 8, in which 475 tons were offered, 316 tons were sold at somewhat irregular prices. Prime quali-

ties found buyers at full valuation and in some instances a small advance was paid, whereas a large number of parcels, of which the quality was not satisfactory, could only be sold by making concessions on the price. On the whole the decline on valuations, which in several cases is about 5 per cent., averages at 2 per cent.

The next large sale by inscription, in which 460 tons will be offered, takes place on August 12. Since the inscription of the 8th instant, 91 tons have been sold, among which about 50 tons Haut Congo Lopori, which had been withdrawn at the sale of the 8th. The stock comprises now about 530 tons, including 300 tons arrived per steamer *Philippeville* on July 5.

Yours truly, C. SCHMID & CO., SUCCESSEURS.

Antwerp, Belgium, July 18, 1904.

ANTWERP RUBBER STATISTICS FOR JUNE.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, May 31. kilos	742,215	342,592	464,675	825,442	877,626
Arrivals in June...	271,334	509,222	297,949	537,799	282,176
Congo sorts.....	189,300	436,868	267,926	517,896	243,308
Other sorts.....	82,034	72,354	30,023	19,903	38,868
Aggregating....	1,013,549	851,814	762,624	1,363,241	1,159,802
Sales in June.....	324,034	363,815	80,954	408,662	433,426
Stocks, June 30...	689,515	487,999	681,670	954,579	726,376
Arrivals since Jan. 1	2,825,760	2,613,926	2,644,808	3,081,392	3,011,463
Congo sorts.....	2,317,431	2,325,132	2,436,214	2,785,134	2,489,026
Other sorts.....	508,328	288,794	188,594	296,258	522,437
Sales since Jan. 1...	2,747,145	2,784,032	2,377,847	2,740,852	2,577,078

RUBBER ARRIVALS AT ANTWERP.

JULY 5.—By the *Philippeville*, from the Congo:

Bunge & Co.....	(Société Générale Africaine) kilos	165,300
Do.....	(Comité Spécial Katanga)	11,800
Do.....	(Société Anversoise)	4,400
Société Coloniale Anversoise..	(Belge du Haut Congo)	3,200
Do.....	(Cie. du Kasai)	81,000
Do.....	(Sud Kamerun)	6,600
Charles Dethier.....	(La M'Poko)	11,500
M. S. Cois.....	(Société L'Ikelemba)	500
W. Mallinckrodt & Co.....	(Alimaïenne)	300
Comptoir des Produits Coloniaux.....		1,000
Société A B I R.....		11,000
Comptoir Commercial Anversois.....	(Société Ibenga)	700
G. & C. Kreglinger.....	(La Lobay)	7,000 304,300

Lisbon Receives More Rubber.

MARTIN WEINSTEIN & CIA. favor us with details of arrivals of rubber, for years ending June 30, as follows, the figures indicating tons:

GRADES.	1899-00.	1900-01.	1901-02.	1902-03.	1903-04.
Benguella....	1893	1026	1206	843	1818
Loanda.....	703	733	680	1053	909
Thimbles.....	293	178	108	103	143
Other sorts.....	—	—	98	100	66
Total.....	2889	1937	2092	2099	2936

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

July 5.—By the steamer *Benedict*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	31,400	10,800	35,100	.....=	77,300
Poel & Arnold.....	7,000	1,400	57,800	11,000=	77,200
United States Rubber Co.	.....	.....	.....	73,900=	73,900
A. T. Morse & Co.....	.....	.....	21,000	63,400=	84,400
G. Amsinck & Co.	4,100	300	1,200	8,900=	14,500
Lionel Hageners & Co..	6,300	.....	1,600	.....=	7,900
Lawrence Johnson & Co.	.....	.....	200	6,000=	6,200
Hagemeyer & Brunn....	3,400	1,000	1,000	.....=	5,400
Total.....	52,200	13,500	117,900	163,200=	346,800

July 14.—By the steamer *Cearense*, from Manáos and Pará:

Poel & Arnold...	46,300	4,600	91,600	4,800=	147,300
A. T. Morse & Co.....	20,900	8,500	43,500	2,800=	75,700
New York Commercial Co.	12,200	2,900	13,900	600=	29,600
Thomsen & Co.....	9,800	.....	3,800	.....=	13,600
Lionel Hageners & Co..	5,800	.....	1,500	.....=	7,300
United States Rubber Co.	.....	.....	.....	8,900=	8,900
Edmund Reeks & Co....	.....	.....	3,200	.....=	3,200

Total ... 95,000 16,000 157,500 17,100= 285,600

July 25.—By the steamer *Fluminense*, from Manáos and Pará:

Poel & Arnold	102,800	13,800	77,900	10,300=	204,800
New York Commercial Co.	27,400	9,800	37,900	700=	75,800
A. T. Morse & Co.....	11,900	2,300	60,100	.....=	74,300
Edmund Reeks & Co....	.....	.....	.....	26,100=	26,100
G. Amsinck & Co.....	7,100	1,800	3,700	.....=	12,600
Lionel Hageners & Co..	6,800	.....	2,100	.....=	8,900

Total 156,000 27,700 181,700 37,100= 402,500

[NOTE.—The steamer *Basil*, from Pará, is due at New York on August 2, with 170 tons Rubber and 15 tons Cauchol.]

PARA RUBBER VIA EUROPE.

JULY 5.—By the *Kronland*=Antwerp:

New York Commercial Co. (Fine) ... 11,500

JULY 5.—By the *Umbria*=Liverpool:

Poel & Arnold (Coarse)..... 37,000

JULY 9.—By the *Campania*=Liverpool:

New York Commercial Co. (Fine) ... 18,500

New York Commercial Co. (Coarse) ... 4,500

Poel & Arnold (Coarse)..... 19,000 41,500

JULY 11.—By the *Philadelphia*=London:

Poel & Arnold (Coarse)..... 11,600

JULY 11.—By the *Maracas*=Ciudad Bolívar:

G. Amsinck & Co. (Fine)..... 3,500

G. Amsinck & Co. (Coarse)..... 4,000

Middleton & Co. (Fine)..... 5,600

Middleton & Co. (Coarse)..... 1,500

Thebaud Brothers (Fine)..... 1,500

Thebaud Brothers (Coarse)..... 1,000 16,500

JULY 12.—By the *Zeeland*=Antwerp:

George A. Alden & Co. (Fine) ... 16,500

George A. Alden & Co. (Coarse)..... 6,700 23,000

JULY 18.—By the *Elturia*=Liverpool:

New York Commercial Co. (Fine) ... 22,000

New York Commercial Co. (Coarse) ... 22,500

Poel & Arnold (Medium)..... 17,500 62,000

JULY 19.—By the *Finland*=Antwerp:

New York Commercial Co. (Medium) ... 8,000

JULY 20.—By the *Yucatan*=Mollendo:

Flint & Co. (Cauchol)..... 3,500

JULY 21.—By the *Mencanars*=Ciudad Bolívar:

Thebaud Brothers (Fine)..... 19,500

Thebaud Brothers (Coarse)..... 14,500

Middleton & Co. (Fine)..... 6,000

Middleton & Co. (Coarse)..... 2,000

G. Amsinck & Co. (Fine and Medium) 15,000 57,000

OTHER ARRIVALS AT NEW YORK

CENTRALS.

JUNE 24.—By *El Valle*=New Orleans:

A. T. Morse & Co..... 6,400

Manhattan Rubber Mfg. Co..... 2,000 8,400

JUNE 24.—By the *Yunuri*=Mexico:

George A. Alden & Co..... 21,000

American Trading Co..... 7,000

Harburger & Stack..... 3,300

E. Steiger & Co..... 1,000

E. N. Tibbals & Co..... 1,200

Isaac Kuble & Co..... 700

Samuels & Cummings..... 500

For Hamburg..... 7,000 41,700

JUNE 27.—By the *Comus*=New Orleans:

G. Amsinck & Co..... 4,500

Eggers & Heinlein..... 1,200

Bartling & DeLeob..... 300 6,000

JUNE 28.—By the *Sarnia*=Carthage:

American Trading Co..... 3,000

G. Amsinck & Co..... 1,000

Isaac Kuble & Co..... 500

Graham, Hinkley & Co..... 400

A. D. Straus & Co..... 400 5,300

JUNE 30.—By the *Advance*=Colon:

Piza, Nephews & Co..... 3,600

Isaac Brandon & Bros..... 3,200 6,800

JULY 2.—By the *Vigilancia*=Mexico:

Harburger & Stack..... 2,000

E. Steiger & Co..... 200

For Hamburg..... 800 3,000

JULY 5.—By the *Alleghany*=Greytown, etc.:

E. B. Strout..... 1,300

G. Amsinck & Co..... 1,100

Andreas & Co..... 1,100

Isaac Brandon & Bros..... 2,200

Isaac Kuble & Co..... 1,200

Kunhardt & Co..... 1,000

Graham, Hinkley & Co..... 700

CENTRALS—Continued.

Roldan & Van Sickle 800

Jimenez & Escobar 500 9,900

JULY 5.—By the *Roman Prince*=Bahia:

J. H. Rossbach & Bros 11,500

Hirsch & Kaiser..... 4,500

Lawrence Johnson & Co..... 4,500 20,500

JULY 5.—By the *Proteus*=New Orleans:

A. T. Morse & Co..... 3,000

A. N. Rotholz..... 2,600

Manhattan Rubber Mfg Co..... 2,000 7,500

JULY 6.—By the *Segurana*=Colon:

Hirzel, Feltman & Co..... 25,000

Meyer Hecht..... 4,900

A. Santos & Co..... 3,400

Roldan & Van Sickle 3,300

Livingstone & Co..... 2,800

A. Rosenthal & Sons..... 2,900

G. Amsinck & Co..... 2,500

Dumarest Bros & Co..... 2,000

Lawrence Johnson & Co..... 2,100

E. B. Strout..... 1,300

R. G. Barthold..... 500

Smithers, Nordenholt & Co..... 600

W. R. Grace & Co..... 500

Silva Bussenius & Co..... 300 52,100

JULY 11.—By the *Thespis*=Bahia:

J. H. Rossbach & Bros 65,000

Hirsch & Kaiser..... 13,500

G. Amsinck & Co..... 3,700 82,200

JULY 11.—By the *Havana*=Mexico:

H. Marquardt & Co..... 1,500

Graham Hinkley & Co..... 500

L. N. Chemedlin & Co..... 200 2,200

JULY 12.—By the *Siberia*=Savanilla, etc.:

G. Amsinck & Co..... 1,500

Graham, Hinkley & Co..... 1,200

Roldan & Van Sickle 1,000

D. A. De Lima & Co..... 700

Banco de Exportatos 500

For London..... 4,000 8,900

JULY 13.—By the *Advance*=Colon:

Isaac Brandon & Bros..... 3,400

Meyer Hecht..... 1,300

Livingstone & Co..... 1,200

G. Amsinck & Co..... 1,200

E. B. Strout..... 1,000

American Trading Co..... 900

W. Loalza & Co..... 500

H. Marquardt & Co..... 500 10,600

JULY 16.—By *El Monte*=New Orleans:

A. T. Morse & Co..... 3,000

Eggers & Heinlein..... 1,000 4,000

JULY 20.—By the *Yucatan*=Colon:

Hirzel, Feltman & Co..... 14,000

G. Amsinck & Co..... 12,200

A. Santos & Co..... 11,500

Meyer Hecht..... 2,800

Piza, Nephews & Co..... 2,400

Lawrence Johnson & Co..... 1,800

Dumarest & Co..... 1,300

E. B. Strout..... 1,100

A. Rosenthal & Sons..... 1,100

Mecke & Co..... 1,100

Eggers & Heinlein..... 1,000

Isaac Brandon & Bros..... 1,800

George A. Alden & Co..... 500

American Trading Co..... 500

Isaac Kuble & Co..... 400

K. G. Barthold..... 400

A. D. Straus & Co..... 1,500

For Brussels..... 5,400 60,800

JULY 22.—By the *Esperanza*=Mexico:

George A. Alden & Co..... 9,000

E. Steiger..... 4,000

H. Marquardt & Co..... 2,500

Harburger & Stack..... 1,500

L. N. Chemedlin & Co..... 1,000

E. N. Tibbals & Co..... 200

Graham, Hinkley & Co..... 1,000 19,200

JULY 23.—By the *Tennyson*=Bahia:

J. H. Rossbach & Bros..... 27,000

Hirsch & Kaiser..... 16,000

A. D. Hitch & Co..... 10,000

Lawrence Johnson & Co..... 6,000 59,000

AFRICANS.

JUNE 24.—By the *Patricus*=Hamburg:

Poel & Arnold..... 8,000

JUNE 25.—By the *Lucania*=Liverpool:

United States Rubber Co..... 45,000

Poel & Arnold..... 3,000

Rubber Trading Co..... 1,000 49,000

JUNE 28.—By the *Vaderland*=Antwerp:

Poel & Arnold..... 45,000

Winter & Smillie..... 18,000

A. T. Morse & Co..... 11,500

Robinson & Tallman..... 3,700 78,000

JULY 1.—By the *Belgravia*=Hamburg:

Poel & Arnold..... 3,000

Rubber Trading Co..... 2,500 5,500

JULY 5.—By the *Kronland*=Antwerp:

George A. Alden & Co..... 120,000

JULY 5.—By the *Celtic*=Liverpool:

United States Rubber Co..... 80,000

JULY 5.—By the *Umbria*=Liverpool:

A. T. Morse & Co..... 11,500

Poel & Arnold..... 4,500 16,000

JULY 8.—By the *Baltic*=Liverpool:

Poel & Arnold..... 18,000

A. T. Morse & Co..... 5,000 23,000

JULY 11.—By the *Patria*=Lisbon:

United States Rubber Co..... 102,000

JULY 12.—By the *Potsdam*=Rotterdam:

Poel & Arnold..... 35,000

JULY 14.—By the *Majestic*=Liverpool:

A. T. Morse & Co..... 16,000

JULY 18.—By the *Georgia*=Liverpool:

United States Rubber Co..... 44,000

JULY 19.—By the *Finland*=Antwerp:

Poel & Arnold..... 33,000

JULY 18.—By the *Graf Waldersee*=Hamburg:

Rubber Trading Co..... 5,000

JULY 21.—By the *Aurania*=Liverpool:

United States Rubber Co..... 45,000

George A. Alden & Co..... 11,000

Poel & Arnold..... 13,000 69,000

JULY 23.—By the *Lucania*=Liverpool:

George A. Alden & Co..... 25,000

Poel & Arnold..... 11,000 36,000

EAST INDIAN.

JUNE 24.—By the *Indrawadi*=Singapore:

Robert Brans & Co..... 11,000

Pierre T. Betts..... 13,500

Winter & Smillie..... 6,500 31,000

JUNE 27.—By the *Manica*=Calcutta:

J. H. Recknagel & Son..... 5,500

Poel & Arnold..... 3,500 9,000

JUNE 29.—By the *Angola*=Calcutta:

Poel & Arnold..... 18,000

JULY 9.—By the *Campania*=Liverpool:

Poel & Arnold..... 9,000

JULY 11.—By the *Shimosa*=Singapore:

Winter & Smillie..... 20,000

Poel & Arnold..... 11,000

Rubber Trading Co..... 6,000 37,000

PONTIANAK.

JUNE 24.—By the *Indrawadi*=Singapore:

Poel & Arnold..... 85,000

George A. Alden & Co..... 66,000

Robert Brans & Co..... 72,000

J. H. Recknagel & Son..... 66,000

Robinson & Tallman..... 30,000 299,000

JULY 11.—By the <i>Shimosa</i> =Singapore:			
George A. Alden & Co.	455,000		
Winter & Smith	200,000		
Poel & Arnold	175,000		
Robinson & Tallman	35,000	865,000	

GUTTA-PERCHA AND BALATA

JUNE 24.—By the <i>Patricia</i> =Hamburg:			
To order	7,000		
JULY 1.—By the <i>Belgravia</i> =Hamburg:			
To order	8,500		
JULY 8.—By the <i>Pretoria</i> =Hamburg:			
To order	6,500		
JULY 11.—By the <i>Shimosa</i> =Singapore:			
George A. Alden & Co.	3,500		

BALATA.

JUNE 30.—By the <i>Grenada</i> =Trinidad:			
Frame & Co.	1,000		
For Havre	2,500	3,500	

JULY 21.—By the <i>Menzanares</i> =Orinoco:			
Frame & Co.	2,500		
For London	200,000		
For Hamburg, etc.	25,000	227,500	

CUSTOM HOUSE STATISTICS.

PORT OF NEW YORK—JUNE.

Imports:	POUNDS.	VALUE.
India-rubber	2,299,177	\$1,429,064
Gutta-percha	31,620	13,968
Gutta-jelutong (Pontianak)	1,613,991	46,801
Total	3,944,788	\$1,489,833
Exports:		
India-rubber	53,552	\$30,760
Reclaimed rubber	129,721	16,178
Rubber Scrap Imported	2,145,151	\$128,366

BOSTON ARRIVALS.

JUNE 1.—By the <i>Cretic</i> =Liverpool:		POUNDS.
George A. Alden & Co.—Central	8,500	
George A. Alden & Co.—African	21,247	30,747
JUNE 10.—By the <i>Sagamore</i> =Liverpool:		
Poel & Arnold—African	11,182	
JUNE 11.—By the <i>Bethania</i> =Hamburg:		
George A. Alden & Co.—African	77,461	
JUNE 15.—By the <i>Canadian</i> =Liverpool:		
George A. Alden & Co.—Central	5,098	
JUNE 27.—By the <i>Pontos</i> =Hamburg:		
George A. Alden & Co.—African	5,660	
Total	130,148	
[Value, \$67,603.]		
GUTTA-PERCHA.		
JUNE 1.—By the <i>Columbian</i> =London:		
Jaeger & Co.	10,406	

EXPORTS OF INDIA-RUBBER FROM PARA—FIRST HALF OF 1904 (KILOGRAMS).

EXPORTERS.	UNITED STATES.					EUROPE.					TOTAL
	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	FINE.	MEDIUM.	COARSE.	CAUCHO.	TOTAL.	
Cmok, Schrader & Co.	249,301	49,483	454,312	11,767	764,863	596,156	63,851	274,643	362,118	1,296,768	2,061,631
Frank da Costa & Co.	261,928	40,402	738,371	11,459	1,052,160	307,428	25,786	246,164	3,340	582,718	1,634,878
Adelbert H. Alden	315,057	80,349	444,055	5,726	845,787	397,991	61,994	146,238	117,119	723,342	1,569,129
J. Marques & Co.	40,482	1,231	55,602	—	97,315	100,329	4,548	52,297	7,605	170,779	268,094
R. Suarez & Co.	32,387	10,621	1,836	—	44,844	112,693	24,507	20,176	6,036	163,412	208,256
Kanthack & Co.	74,636	20,131	22,773	4,962	122,502	35,202	10,400	36,315	—	82,007	204,509
Neale & Staats	—	—	84,372	20,212	104,584	17,976	1,848	6,804	30,112	56,740	161,324
Singlehurst Brocklehurst & Co.	5,294	170	15,526	—	20,990	67,145	15,745	11,141	—	94,031	115,021
Pires, Teixeira & Co.	53,899	—	31,330	—	85,229	—	—	—	—	—	85,229
Denis Crouau & Co.	19,193	1,851	28,812	—	49,856	801	176	16,312	—	17,289	67,145
B. A. Antunes Co.	4,903	1,647	4,322	4,821	15,693	—	—	—	—	—	15,693
Divers exporters	—	—	1,094	—	1,094	—	—	—	530	530	1,624
Direct from Iquitos	1,062	179	1,050	3,744	6,035	212,411	67,033	126,664	597,550	1,003,658	1,009,693
Direct from Manãos	3,136,303	713,859	817,101	1,027,707	5,694,970	2,048,018	231,947	500,352	1,437,199	4,217,516	9,912,486
Total January-June, 1904	4,195,045	919,923	2,700,556	1,090,398	8,905,922	3,902,150	507,925	1,437,106	2,561,609	8,408,790	17,314,712
Total January-June, 1903	4,073,517	1,038,149	2,726,135	1,036,078	8,873,879	4,803,518	589,520	1,328,363	2,282,155	9,003,565	17,877,444
Total January-June, 1902	3,871,260	967,250	2,351,918	994,532	8,184,960	4,511,911	903,549	1,465,646	1,567,998	8,449,104	16,634,064
Total January-June, 1901	4,868,612	1,131,774	2,401,598	1,111,084	9,513,068	3,353,916	732,916	1,408,662	1,980,886	7,476,380	16,989,448

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
May, 1904	3,772,026	335,218	3,436,808	May, 1904	4,909,632	2,476,656	2,432,976
January-April	28,222,397	1,126,691	27,095,706	January-April	21,299,264	12,833,414	8,465,850
Five months, 1904	31,994,423	1,461,909	30,532,514	Five months, 1904	26,208,896	15,310,070	10,898,826
Five months, 1903	25,215,766	1,355,007	23,860,759	Five months, 1903	24,886,400	17,354,512	7,531,888
Five months, 1902	24,295,122	1,573,991	22,721,131	Five months, 1902	23,576,224	12,894,896	10,681,328
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
May, 1904	2,878,480	504,680	2,373,800	May, 1904	139,920	23,320	116,600
January-April	12,143,780	3,779,600	8,364,180	January-April	598,180	25,960	572,220
Five months, 1904	15,022,260	4,284,280	10,737,980	Five months, 1904	738,100	49,280	688,820
Five months, 1903	16,059,120	6,089,820	9,969,300	Five months, 1903	812,020	26,400	785,620
Five months, 1902	12,987,920	4,702,280	8,285,640	Five months, 1902	661,980	93,500	568,480
FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
May, 1904	1,629,100	918,060	711,040	May, 1904	207,240	nil.	207,240
January-April	7,645,220	5,028,760	2,616,460	January-April	1,066,340	10,340	1,056,000
Five months, 1904	9,274,320	5,946,820	3,327,500	Five months, 1904	1,273,580	10,340	1,263,240
Five months, 1903	6,804,160	3,879,480	2,924,680	Five months, 1903	1,294,700	12,320	1,282,380
Five months, 1902	8,006,900	3,569,720	4,437,180	Five months, 1902	1,199,440	6,820	1,192,620

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canada consumption.

*General Commerce.

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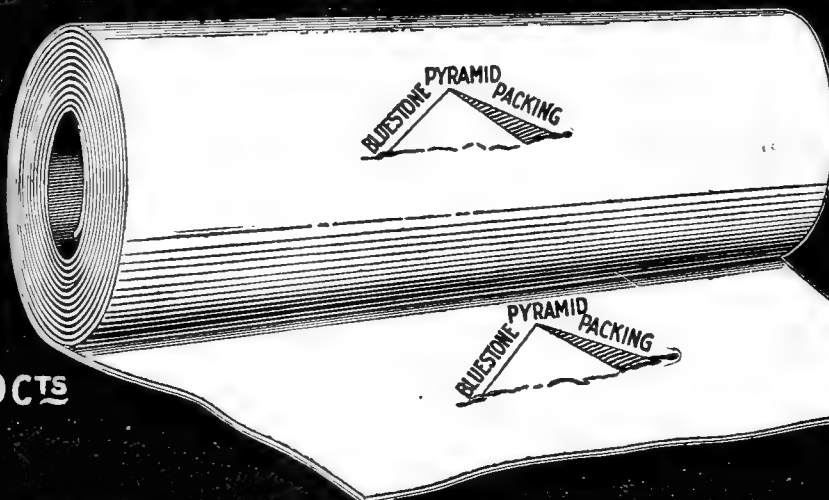
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THE TRADE FOR FIFTEEN YEARS.

THE completion with the present issue of the THE INDIA RUBBER WORLD of the fifteenth year of publication seems a proper occasion for indulging in a somewhat retrospective review of the trade which this Journal represents. And first we may be pardoned for observing that, in this era of constant change, it is something of an achievement to keep a newspaper going for fifteen years, under the same name, in the same form, and without departure from its original policy, and especially without change in its editorial control, and at the same time to retain the support of its *clientele*.

Even the most cursory review of the rubber interest for the last fifteen years reveals a period of remarkable growth. Not the least interesting developments have been in connection with the production of crude rubber. While the Amazon valley has continued the leading source of supplies, the vast rubber fields of Africa, practically unknown fifteen years ago, have been developed on a large scale, and the rubber from there, at first badly prepared and received by the manufacturers with distrust, has become better in quality and finds a ready market at prices often on a par with the Pará grades. During this period also has come an extended interest in rubber culture in Mexico and Central America and in the Far East, resulting in the planting of millions of thrifty trees, the oldest of which are now beginning to produce rubber profitably. The attempts to "corner" crude rubber during this period, made by Vianna and Flint, and the spectacular failure of both, are matters of history. In connection with crude rubber supplies, reclaimed stock should be taken into account, and in this line the progress has been most satisfactory, better grades being manufactured, and nearly everything in the way of vulcanized scrap now being recovered.

In the way of rubber machinery nothing revolutionary has occurred, although many new machines for specific uses have been invented and are in successful operation: The ordinary factory equipment to-day as compared with that of a decade and a half ago is notable as being much heavier and of greater capacity. At no time in the history of the industry have there been such heavy, large hydraulic presses, so many large calenders, and mills.

As for the manufacture of rubber goods, the greatest progress in any one line in volume of business, and in new and interesting products, has been, of course, in the way of mechanical rubber goods. The most important development in this line is the large production of rubber tires, first introduced on a practical basis within fifteen years. The invention of the pneumatic bicycle tire, its wonderful sudden development, and the final settling down into a staple business, will long be remembered as one of the spectacular incidents of the rubber trade. The growth of the solid vehicle tire in public favor, although it has been slower, is equally interesting, while the production of the many types of automobile tires has taxed the ingenuity and the capacity of the brightest minds in the trade.

In the line of rubber footwear the growth of the busi-

ness has been remarkable, and it would seem almost as if it had outpaced the needs of the market. The specific changes in this line have been the general substitution of the wool boot, with rubber over, for the rubber boot, in the northwestern United States, and the general introduction of the tennis shoes throughout the American market. Appertaining to footwear, there may also be noted the rubber heel, which was long looked upon as a fad, but is now considered a staple product.

In the line of rubber clothing the trade has witnessed the remarkable growth in America of the gossamer rubber garment and its subsequent extinction. This was followed by the mackintosh, which, together with the shower proof garment of the cravenette order, may be reckoned upon as having a large and steady market.

In druggists' sundries the general business has increased notably, and the tendency has been to make goods of finer finish, with more artistic lines, and packed with an eye to artistic effect. Close to this line is the manufacture of dipped goods, in which there has been a remarkable growth in the United States, and lines of goods produced which have captured the markets of the world.

Fifteen years ago there were not a few who believed that celluloid products would soon displace hard rubber. That prophecy, however, has had no fulfilment, nor has any substitute been found for the better grades of hard rubber. The business has shown a steady normal growth, and particularly in electrical lines has it had many interesting developments.

In the production of insulated wire and cables the growth has been much larger, though the United States has not thus far become an important factor in deep sea cable work. This country has never paid the attention to Gutta-percha that the rest of the world has, except, during the last few years, in the line of golf balls. Here have been surpassed the expectations of those interested in the production of sporting goods, the American ball leading the world.

While this rather cursory review relates more directly to the industry in the United States, with which THE INDIA RUBBER WORLD is most closely concerned, it is more or less applicable to the rubber industry as a whole. Elsewhere, the most marked development in the volume of trade has been in Germany, which has attained within recent years a much more important relative rank among rubber manufacturing countries. The benefits to the industry there which have resulted from the close relation of the trained chemist to the factory have not been without an influence upon the industry in all other countries.

THE INDIA RUBBER WORLD desires again to express its appreciation of the support which it has received from the trade, not only at home but to a measurable extent in every other country in which any interest in rubber exists. It promises, likewise, to endeavor to continue to merit this support, by keeping its readers promptly and accurately informed of progress in the industry, of changing trade conditions, and the development of sources of raw materials, in such manner as shall render it of real value in every branch of the rubber interest.

THE ALLEGED "CORNER" IN RUBBER.

WE do not doubt that holders of crude rubber, like merchants in other lines of business, sell their wares for all that can be got for them. Why shouldn't they? Probably there are times when a sudden rise enables an importer to dispose of a stock of rubber at an exceptional profit. But prices are liable to decline quite as suddenly, involving loss to the dealer.

The merchant who buys crude rubber to sell again must depend not a little upon guesswork—as to what volume of rubber is forthcoming in any season, whether it will arrive promptly or otherwise, and what is to be the demand for consumption. These are the elements that determine prices, and a merchant able to forecast them unerringly for a few seasons would have the whole trade at his mercy. As the business is conducted, however, the rubber merchant is more apt to avoid buying largely on his own account, preferring to make purchases for the account of consumers, in which event he is sure of a commission on every order, whether prices are high or low.

Yet one continually hears remarks on the "corner" in rubber, as if all the sources of supply were under a single control, and that dominated by interests intent upon the oppression of the manufacturer. If such controlling interest can be located we shall regard it as a most important piece of news, and give it prominence accordingly.

From our own standpoint, we have not been able to discover any such agreement among all the rubber trading houses of the world as would be necessary to control prices permanently. And if a company should be organized for any such purpose, we should regard its share certificates on a par with the "gold bricks" which are reputed to find a market among exceptionally gullible rustics.

Any manufacturer who will, is free to-day to go to Manáos or Pará or Antwerp—not to name other ports—and buy rubber in the same markets with the importers who now supply him nearer his factory. And if all the rubber importing houses in Europe and America were to combine to force consumers to pay exorbitant prices for rubber, there would not fail to come into existence new trading houses ready and willing to handle the raw material at a fair profit, and who would find an opportunity to pick up stocks from the daily arrivals, at some market or another, from scores and hundreds of prime bases of supply.

Our German contemporary has lately made some pertinent remarks, which we are pleased to reproduce on another page, in refutation of the idea that the high prices of rubber are due to an alleged "ring" of importers in Liverpool. We will only supplement these with the suggestion that rubber is higher in price now than formerly for the same reason that ivory and whalebone are higher—the supplies are smaller in proportion to the demand.

It is stated that in seventy years the price of whalebone has risen from 13 cents to nearly \$7 a pound, but not as a result of a "corner" at any time. One important difference between whalebone and rubber, however, is that the latter is capable of being made more plentiful by means of

cultivation, as is bound to be proved by the yield of many plantations within the next few years.

THE MECHANICAL RUBBER MANUFACTURERS of this country are to be congratulated upon having taken steps to form such an organization as is reported, on another page, to be under way. The possibilities for good to the industry are many, though it may take time to demonstrate the real value of the organization. But certain it is that in an industry so extensive and embracing so many men of ability, good must come from a movement designed to render them better acquainted, and to put them in a position to work in concert in matters in which their common benefit is concerned, rather than have them continue to work without coöperation, even if all should have the same objects in view. It is a narrow view which some persons have taken of such a movement—that its chief purpose should be an agreement upon prices. This should be and will prove to be the last thing undertaken. The longest maintained and the most beneficial organization of rubber manufacturers in existence is that in Germany, and it has never attempted, as a body, the regulation or control of selling prices of products. But doubtless there are customs in the trade, which have grown up through carelessness here or injudiciousness there, the correction of which would be worth more to the manufacturers to-day than a material advance in selling prices, and in dealing with such problems the keenest competitors can afford to work in harmony, for the good of each and of all concerned.

IN THIS AGE OF LABOR SAVING MACHINERY it is only natural that attention should be devoted to mechanical aids in the production of rubber, which hitherto has been accomplished by hard work alone, and principally in countries without any surplus of laborers. Not the least element of interest in connection with a rubber smoking device illustrated on another page of this paper is the fact that it has been designed and patented by a Brazilian—in a land whose people have not been noted for enterprise or ingenuity in the mechanical field.

A GRUESOME BIT OF NEWS which we find in the *Brazilian Review* of August 2 may have a more direct connection with the rubber trade than appears at first sight. The paragraph reads:

Several of the children of the 1051 refugees from the drought at Ceará, who arrived at Belem [Pará] in the steamship *Itabira*, died en route of the effects of starvation. The captain, Mr. R. Nilson, did what he could, supplying food at his own cost, but the relief, in this instance, came too late.

We are led to believe that the droughts in Ceará are about the most devastating known in any country. That being essentially an agricultural state, a season without rain means that the population must go elsewhere for means of subsistence. Leaving their cattle behind to perish for want of water, the farmers from whole districts actually flee with their families, without always being able to escape with their lives. The chief recourse of the Cearenses, in such circumstances, is to seek employment in the rubber camps up the Amazon, and they make the best of all available *seringueiros*, being more intelligent and more capable of sustained labor than the Indians native to the upriver districts. Ceará's misfortune, therefore, is turned to the rubber consumers' advantage, since an unusual influx of Cearenses in the *Hevea* producing districts means an increased production of rubber. What is more, of every considerable body of Cearenses going into the rubber fields, a certain pro-

portion remain, giving rise to a permanent population of rubber workers of the best type yet known, and giving greater system and continuity to the business of getting out rubber. If the above item of Brazilian news means anything, it indicates a large movement of laborers to the rubber districts this year, and at the beginning of the season.

WHO CUTS THE AMAZON CABLE?

TO THE EDITOR OF THE INDIA RUBBER WORLD: In reference to the article published in your August number [page 380] giving the cause of the many interruptions of the Amazon cable, as explained by Captain Arthur Schindelar, I beg to state that his information is absolutely unfounded and incorrect. The Amazon cable is not purposely cut to aid or abet those interested in rubber, as that gentleman's statement implies, nor has the company any other interest than to keep the cable in working order. Captain Schindelar apparently does not know that any one cutting a cable or otherwise interfering with telegraphic communication commits a crime, and is liable to a term of imprisonment not less than three years. Imagine having to suborn the officers and crew of the repair ship, the staff at Manaós and Pará (not to mention the intermediate stations), the representative at Rio de Janeiro, and the London directors for nine years!

Who can be paying for the loss in traffic and the bribes all this time, and who is doing the cutting? It cannot be the rubber merchants, as nearly every house in Pará is represented by a branch in Manaós, and all business is stopped in the latter city during the interruptions. It cannot be the federal government, seeing that a subvention is paid by it to assist the company. It cannot be the state governments, when we know they expended 7,000,000 milreis to open up a road for a land telegraph line, which was constructed and afterwards abandoned on account of the expensive maintenance and interruptions due to falling trees, landslides, etc. It cannot be the company itself, seeing that during the interruptions the traffic is *nil* and the subvention reduced if the trouble lasts over 90 days, and over £1,000,000 have already been spent to improve the service.

Will Captain Schindelar kindly say by whom the cable is cut? I am sure the cable company would pay him handsomely for his information. I can testify that up to the end of 1902 the cable company had used every means and device that science can teach in order to maintain permanent telegraphic communication between Pará and Manaós. I defy any one to prove that the interruptions are not due to natural causes, the principal ones being falling banks, sunken logs, chafing by rocks, and the bed of the river changing on account of the seething current, which in its mad career washes everything before it, the cable becoming buried, making repairs difficult. I wonder if Captain Schindelar has ever noticed the current opposite Parintins and Obidos, or the meeting of the waters below Manaós? Fancy a cable living in that turmoil! *There is no necessity to cut it.* I regret not having met or heard of Captain Schindelar during the ten years I was in that district, where I know every port on the river between Pará and Manaós and consequently everyone of importance, especially Americans and English travelers; however, I hope the information he picked up regarding the "controlling (*sic*) of the rubber trade on the Amazon" was from a better source than that of the cable interruptions. Yours very truly, R. H. MARDOCK,

Late Superintendent of the Amazon Telegraph Co., Limited; *Concessionaire* for Wireless Telegraphy in Amazonas state; and secretary to the Amazon Commission at the St. Louis World's Fair.
New York, August 22, 1904.

THE GOVERNOR OF PARA STATE.

THE portrait on this page is that of the young governor of the state of Pará, Brazil, who, previous to the fall of the monarchy, started his public career in the diplomatic service, being sent to England and France. After rendering service to his country as a member of the chamber of deputies in the Federal congress, he was elected governor, and is at present in the fourth year of the direction of the public affairs of his state. Through his determined and convicted policy, his management of the state of Pará during the last four years has been that of reconstruction of the budget, heavily thrown out of equilibrium by the economic and financial crisis of the last five years. Nevertheless, encountering only obstacles in his way, he adopted a very economical policy which is already yielding good and material results. Dr. Augusto Montenegro is the governor of one of the richest states of the Brazilian republic. In the revenues of the customs of the republic, Pará to-day takes the third place, that of Rio being first and Santos second.

The principal element of the rich resources of the state is the India-rubber industry; the crop July, 1902, to June, 1903, amounted to 11,327 tons, representing approximately \$14,850,000 in value. The crop ending June 30, 1904, showed an increase in tonnage, and, owing to the high valuations in consuming markets, one will not err in saying that this part of the Amazon valley produced over \$16,000,000 worth of raw material.

Pará has yet a good many unexplored sources of production, and with the regular exploitation of the Xingú, Tapajós, and Tocantins rivers—the present output from which represents but a small fraction of their possible production—the India rubber production will go far beyond the figures given above. The development of these rivers, with the aid of railroads to give easy access to the falls, would open another era of prosperity to this great state, where the natural resources are inviting to foreign capital and paying undertakings.

Governor Montenegro was elected November 15, 1900, by a large majority, for a term of four years, and was inaugurated in office February 1, 1901. There is talk of the probability of his reelection this fall, in which case Pará will have cause for congratulation, for the honesty and energy that the governor has displayed thus far are a guarantee of prosperity to his native state.

On the occasion of his birthday, in July, Governor Montenegro was the object of an imposing demonstration on the part of the merchants of Pará. In reply to the address that was presented to him, the governor pointed out that it had been from the first an aim of his administration to maintain order and credit without increasing expenditure. This he had realized, and the disorders so common when he took over the administration had ceased, and not only had he, in spite of the terrible financial crisis, not added a *vintem* to taxation, but on the contrary it had been reduced. This was possible only by the exercise of the strictest and, as it has been termed, almost "ridiculous" economy. To pay off obligations accumulated under previous administrations, the foreign loan was negotiat-

ed and the banks and commercial body relieved of a mass of credit paper too heavy for their market to carry. The effect has been immediate, and though for some time the Pará market must feel the consequences of the late crisis, confidence has revived and with better rubber prices and greater stability of exchange, prosperity is returning. The *Brazilian Review*, edited by an Englishman, remarks in this connection: "The merchants do well to be grateful to Dr. Montenegro who, young as he is, has shown good sense and resolution in dealing with difficult problems, quite uncommon in this country."

THE RUBBER SCRAP SITUATION.

FROM Russia a correspondent of THE INDIA RUBBER WORLD writes: "The price for old rubber shoes has heretofore been so low because there were large quantities of them here in Russia, and we were compelled to sell at any price. At present, however, the quantity of old rubber shoes in the market is very small, as most dealers have already sold their stock, while, on account of the low prices which prevailed, few have been collected, these coming mostly from distant parts of Russia, whence the railroad freight to here amounts to 2 cents per pound. Under these conditions it does not pay to collect the old shoes, and there probably is only one third of the quantity in the market that we usually had in the past. Besides, Russian manufacturers at present buy large quantities of rubber shoes, while an export duty of 2½ cents per pound on old rubber shoes has been approved and may at any time begin to be enforced. So, if the American manufacturers will not pay higher prices, they will not be able to buy old rubber shoes in Russia, and will be compelled to confine themselves to American old rubber shoes, which will, of course, lead to higher prices in America also."

* * *

AT the request of some leading firms in the rubber trade who were in doubt as to whether the proposed Russian export tariff on waste rubber had been put in force, the department of state at Washington cabled to the United States embassy at St.

Petersburg for positive information on the subject, and received the following return cablegram, dated August 4:

Informed by Russian government that time when new export duty on rubber waste becomes operative not yet fixed; probably very soon, in view of conclusion of Russo-German commercial treaty. MCCORMICK.

THE JIMINEZ RUBBER PLANTATION.

A YEAR ago this Journal mentioned more than once the planted rubber trees on the coffee estate of the late Joaquin Jiminez, of Tuxtepec (Oaxaca), Mexico. These trees were seen by Ben L. Edgerton, in his recent inspection, as shareholders' committee, of the Batavia plantation, which is near by. The estate as a whole, now owned by the founder's son, Joaquin Jiminez, is reported in a prosperous condition, and the rubber trees large and thrifty. The inspector for the Obispo plantation, John A. Schauweker, also visited the Jiminez property. He reports that the rubber covers about 50 acres, for which the owner asks \$80,000 [Mexican?], or \$1600 per acre, his father having refused \$1200 per acre.



DR. AUGUSTO MONTENEGRO
Governor of Pará.

RUBBER PLANTING IN CEYLON AND THE MALAY STATES.

As Seen by The Editor of "The India Rubber World."

SIXTH LETTER—CONCLUSION.

Rubber Plantations at Klang, in Selangor.—Mr. Bailey and his Work.—Distance of Planting.—Age at Which *Hevea* Trees Yield.—The Labor Question.—Mr. Carey's Planting.—The Chinese as Rubber Planters.—The Selangor Rubber Co.—Return to Singapore and Departure for Hong Kong.

DURING the night spent on the *Sappho*, on the trip from Singapore to Selangor, we passed through a succession of heavy showers, but the sea was smooth and it was cool enough to be fairly comfortable. The meals aboard the boat were also good, and the native servants as intelligent as it paid them to be. At 8 the next morning we stopped at Port Dickson, where there is a good harbor, with an iron pier and a few bungalows and native houses set down in the jungle. After discharging freight we left, following the coast about three miles out. The land was low, wooded down to the water's edge with an occasional break where a river discharged its muddy flood into the clear water of the Straits.

In due time I reached Port Swettenham, where a short railroad journey took me to Klang. The station master then told me that I could safely trust the rickshaw man to take me to Mr. W. W. Bailey's bungalow, where I had been invited to make my headquarters. He evidently knew the name, for he grinned, said "Bailee," and started off. Far out into the country he took me, perspiring profusely, but keeping steadily at it. On the way we passed considerable plantations of *Hevea*, which I examined with interest. Finally he stopped at a gateway and pointed out a hillside bungalow and again said "Bailee" and intimated that he was ready to be paid. I did not quite share his confidence, however, and insisted that he accompany me up to the house, which with some reluctance he did. And it was lucky that I did so, for it soon developed that this was the bungalow of the plantation superintendent, who was absent, the house being in charge of the native servants. Not speaking much Malay and they knowing no English, it was a bit difficult for me to make them understand what I wanted, but finally one of them mounted a bicycle and, inviting us to follow, led us back to Klang, and up to the real Bailey bungalow. The house was most beautifully situated on a slight eminence with beautiful palms, foliage plants, and flowers in its gardens, and a view in the distance of the lofty istana of Selangor's sultan.

I was at once cordially welcomed by Mr. Bailey and his beautiful wife, and entertained most delightfully. The next morning we drove over the road that I had traveled twice the day before, and went thoroughly over both Lowlands and Highlands estates. After stopping at the bungalow of the superintendent, from which we had a fine view of acres of *Hevea*, we drove by the coffee mill, and the coolie lines to the extreme end of Lowlands, where the very last planting had been done.

This was in alluvial soil divided up into parallelograms by drains that were 4 to 5 feet wide and from 3 to 6 feet deep. The soil was wonderfully rich and was not planted with *Hevea* seeds but three foot stumps, as the seeds and the tender shoots have so many animal and insect enemies that stumping is far more successful. These stumps are nursery plants cut back into the brown, set out carefully and never shaded. Not only is the top cut back, but the tap root is shortened a bit to prevent doubling, and the laterals are also trimmed a little.

This planting is done in any month of the year when the rains are on. In preparing the ground holes are dug 15 to 18 inches in diameter and about the same number of inches deep, the hole being left open for two weeks, after which a little of the surface soil is scraped in. Then the plant is set and carefully covered in. The trees that are ready for tapping are selected, not by their age but from their size. For a general rule any *Hevea* that is 30 inches in circumference 3 feet from the ground is large enough to produce rubber. In a plantation in a good

location in this part of the world the trees mature about as follows: At the end of the fifth year about 25 per cent. will be large enough to tap; at the sixth year there will be 50 per cent., and at the seventh all of them should be big enough.

Speaking again of the drainage system at Lowlands, it was marvelously complete, all of the channels leading into the great agricultural drain that ran through the middle of the plantation, and which I believe was a government enterprise.

In examining the plantation we walked over good paths by



ISTANA OF THE SULTAN OF SELANGOR.

the side of the drains, crossing them on tree trunk bridges, and ended by driving over two very good roads that led to the very heart of the planting. The oldest rubber on Lowlands was some 500 acres of five year old trees, numbering 52,000. These had been later interplanted with another 52,000 of varying ages. There was also 120 acres of two year old trees, 18,000 in number. The largest five year olds that I saw were 27 inches in circumference, 3 feet from the ground, and were in a lot that were planted 20 × 20 feet. Speaking of distances observed in planting, Mr. Bailey had tried many experiments. He had plots 14 × 14, 14 × 28, 14 × 42, 20 × 20, and 24 × 24 feet. The latter plantings were almost all interplanted later with *Ficus elastica*. There was also considerable coffee in with the rubber, and as it happened to be of an especially fine quality it at that time was paying all of the expenses of the planting and care of the rubber.

The laborers were a mixed lot, being Tamil, Chinese, and Javanese coolies. The Tamils are rather hard to get but are fairly good laborers; the Chinese coolies are good rough laborers but are not the equal of the Javanese. As there is a glut of labor in Java there is a likelihood that the planters in the Malay states will be able to get many of them, and as they all

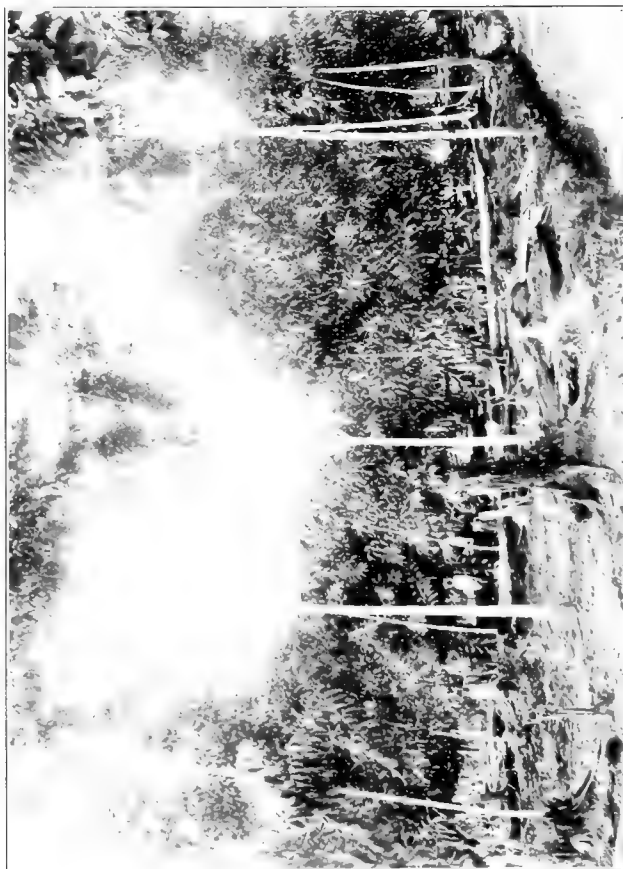


"HEVEA" SIX MONTHS AFTER PLANTING.

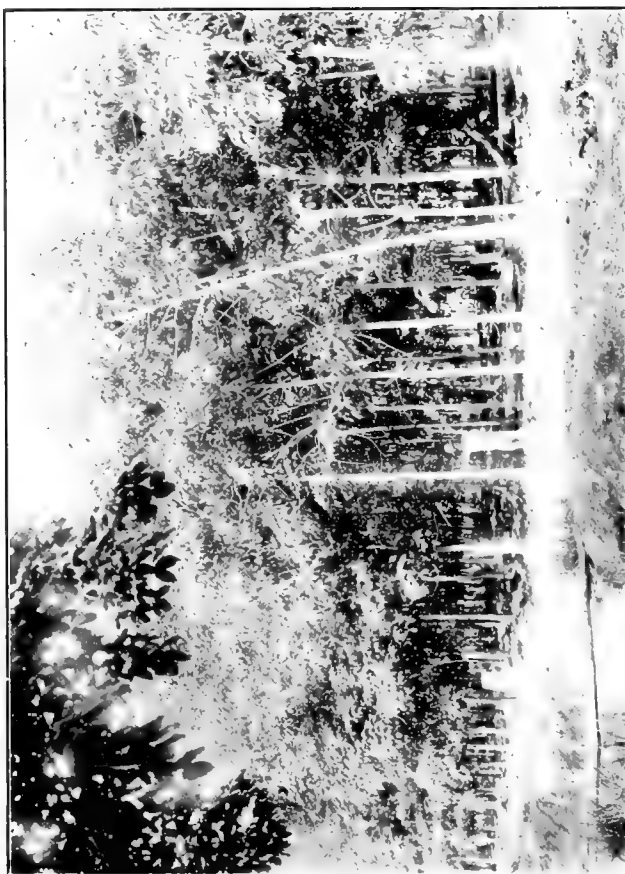


"HEVEA" PLANTED APRIL, 1900.

PLANTED AUGUST, 1900.



"HEVEA" AND "FICUS" INTERPLANTED.



PLANTED 1899; PHOTOGRAPHED 1903.

VIEWS ON THE PLANTATION OF THE SELANGOR RUBBER CO., FEDERATED MALAY STATES.



MR. BAILEY'S BUNGALOW, KLANG.



FOUR YEAR OLD "HEVEA," KLANG ESTATE.

speak Malay and are content with 35 to 40 cents, Mexican, a day, and find themselves, they are much sought after. Besides they had far rather work for an Englishman than a Dutchman.

After visiting Highlands estate and looking over the coffee mill, Mr. Bailey took me for a drive out in the outskirts of Klang, that I might see the small plantings of the Chinese. These were of no especial moment, being chiefly coffee gardens grown up with grass, with a few *Ficus elastica* or *Hevea* trees put in at haphazard. One Chinaman, Cong Lamb, however, had about 20 acres of coffee and *Hevea* planted 15×15 feet, the trees looking about 5 years old and quite well grown.

But the plantations owned by Chinamen and run by Europeans are another matter. For example, the Kong Yaik estate, which is managed by Mr. E. V. Carey. Here are 300 acres containing some 60,000 trees that average 3 years of age. Most of this rubber is planted 20×10 feet, although there is some 10×10 and 15×15 . One advantage of the 10×10 planting was that almost no weeding was necessary, the ground being absolutely free from all vegetation. While going over this plantation Mr. Carey and I experimented with a two handled tapping knife, an invention of his, which certainly did very effective work.

Next to the estate of which Mr. Carey has charge is the Batu Unjor plantation owned by a wealthy Chinaman, Loke Yew, on which there are some 17,000 $4\frac{1}{2}$ year *Heveas* which looked first rate.

The land in Selangor belongs to the state and is acquired by the payment of \$2, Mexican, an acre cash, and \$1 an acre annual rental in perpetuity; 25 per cent. of the land taken must be under cultivation within five years, or it reverts to the government. At the same time the powers that be are very lenient and disposed to help all honest effort by granting time extensions. There is also a $2\frac{1}{2}$ per cent. *ad valorem* export duty on such products as rubber that is a part of the land grant.

That evening many friends of Mr. Bailey's dropped in and dined and later visited the Klang club, where I met a score or more of young Englishmen who were connected either with the government or with the plantations in the neighborhood.

The next morning my host took me by rail to Batu Tiga, where is another big rubber plantation in which he is interested—the Selangor Rubber Co., or, in the native, Sungei Rengam. We put in three hours of hard tramping over this



FOUR YEAR OLD PLANTED "FICUS."

[On the Lowland and Highlands estate. Showing the Aerial Roots as thrown down at this age. *Hevea* trees in the background.]



"WILD" "FICUS ELASTICA" IN SELANGOR.



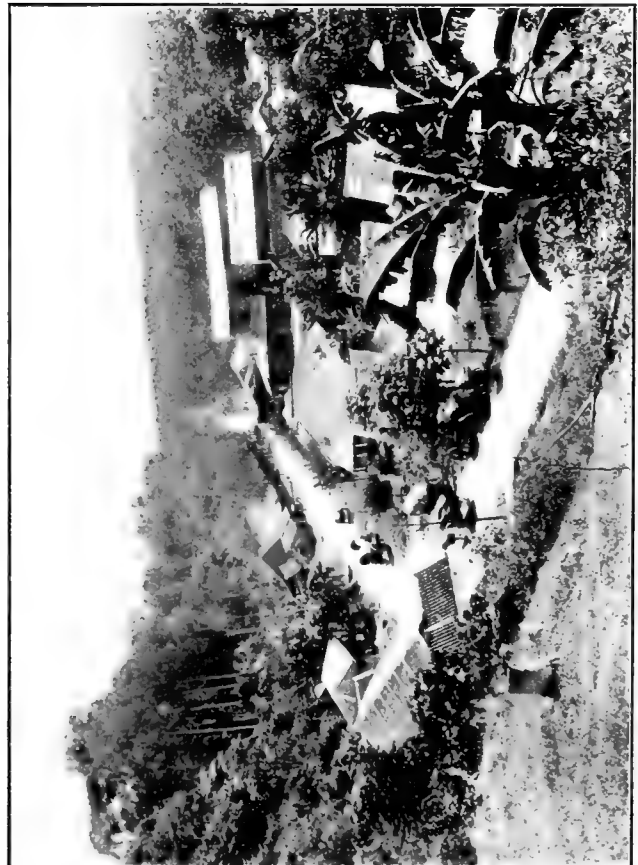
FIVE YEAR OLD "HEVEA"—PATALING ESTATE.



"HEVEA" AND "FICUS" ON THE HIGHLANDS AND LOWLANDS ESTATE.
RUBBER PLANTATION VIEWS IN SELANGOR, FEDERATED MALAY STATES.



FOUR YEAR OLD "FICUS"—SELANGOR RUBBER CO.



PANORAMIC VIEW OF THE HIGHLANDS AND LOWLANDS ESTATE.



CUTTING A ROAD THROUGH JUNGLE.

[A scene in Selangor.]

estate, and got very hot and damp. But it was well worth while.

The plantation is seven miles from Klang, on the railroad that joins Klang with Kula Lumpur. There is also a fine government road soon to go through this estate. It consists of 5150 acres, of which 1150 are already opened and in rubber. To this will be added 300 acres this year, the trees being planted about 200 to the acre. The soil is a rich alluvial, slightly rolling, and is cut by huge drains that lead into the Klang and the Damansara river. The oldest planting was made in May, 1898, and was 24×36 feet, this planting being quincunxed in the latter part of the same year and in October, 1900, was still further interplanted. The last planting, however, is so thoroughly shaded by the earlier that it is doubtful if it amounts to anything. The trees in the first planting average $28\frac{1}{2}$ inches in circumference, 3 feet from the ground, the largest being 47 and $52\frac{1}{2}$ inches in circumference. Of the plantings already mentioned, there were 90 acres 24×36 feet, and 45 acres 14×14 . These latter showed an average of $29\frac{1}{2}$ inches circumference at the base, and 19 inches 5 feet from the ground. In 1899 there were 30 acres planted 12×12 and 90 acres 14×14 . The former measured when I was there, on an average, 26 inches at the base and 16 inches 5 feet from the ground. In 1900 there were 285 acres put into Pará and 47 acres in "rambong" or *Ficus elastica*. There are also various other plantings of Pará and *Ficus* alternating, of Pará and coffee, and of *Ficus* alone. The *Ficus*, when alternated with Pará, seems to do wonderfully well, as does also the Pará.

The greatest care is taken of this plantation, the whole area being weeded by hand until the shade becomes so dense that no weeds grow, all of the aerial roots of the *Ficus* being cut away except those that will develop into good straight trunks,

and the keenest sort of watch being kept for white ants, which are always to be found in the new land. As tapping will begin the next year, a rubber curing house 20×60 feet has been built, and all preparations are being made for turning out the best quality of rubber. All of the trees seem to produce latex abundantly, although there was a wide difference in the appearance of the bark, some being quite white, while other showed a distinct shade of red. There were a variety of theories as to the cause of this, but the real reason was not apparent.

After the examination of the Selangor estate, and a very pleasant visit with the manager, at his bachelor bungalow, where, by the way, he presented me with a cane made of polished sections of a great variety of hard woods indigenous to that country, we again took train and started for the Pataling estate. The road ran for some miles through the densest sort of jungle, the land on one side for some six miles being owned by the Selangor company. When we reached Pataling we found that the superintendent, Mr. Rendle, was away, as was also his wife. His assistant, Mr. Smith, was there, however, and he urged us to come up to the bungalow, which was prettily located on an eminence overlooking the plantation, and ordered the Malay servant to prepare for us "mukan"; in other words, food. While we ate, it rained very heavily, but soon after cleared up and we were so sure that the storm was over for the day that we allowed a black boy to take our mackintoshes down to the station while we examined the rubber. The soil here seemed a trifle hard and was more hilly than that which I had before examined, but the rubber looked well. After examining that on the hillsides we went down to a lower level and were just beginning to take measurements, when the rain



"HEVEA" ON THE VALLAMBROSA ESTATE, KLANG.



A RIVER VIEW FROM KLANG.

came down again in torrents. We each selected a big tree, under which we stood for a while, but ere long even that was no protection, so we started for the railway station. We were now drenched to the skin and the walking was very bad. We, however, caught our train, and in due time arrived in Klang, where, after a change of clothing and a substantial dinner, we felt as well as ever.

I had hoped to have time to run down to Port Dickson and visit Mr. V. R. Wickwar, who has a fine plantation of *Hevea*, but I found my time would not admit of it. Nor did I visit the Pears plantation in Muar, as the owner, to whom I had letters, was absent in England.

Speaking of close planting and hand weeding, I could not but be struck with the fear that the planters have of fire. Mr. Bailey, who once had charge of a large plantation in Johore, told me that the fire once got into some thousands of acres of his sago, and although he had 500 men of his own and 900 lent him by the sultan, they were weeks in getting it under. He had, by the way, some hundreds of acres of Ceará rubber which were also destroyed.

There is little *Castilloa* planted in Selangor. I saw a little on Lowlands, which bled freely, but the planters do not care for it, as they believe that either the *Hevea* or the *Ficus* is superior. The latter tree is of course a native of this land, and grows to great size. There are reports of as much as 100 pounds being taken from a single tree. Ten year old trees are said to produced from 12 to 15 pounds.

The time came all too soon for me to say good by to the Baileys, whose generous hospitality I shall always remember, and the following forenoon saw me in a sampan headed for the *Sappho*, which lay far out in the river. I got aboard finally, and was greeted by Captain Foster like a long lost friend. The voyage back to Singapore was uneventful, the sea being perfectly smooth, and the temperature bearable.

Along toward evening we came in sight of Malacca, but, much to my regret, did not get a chance to go ashore. In fact our captain being in a hurry, did not even anchor, but hove to in the open roadstead and

there received the agent, the health officers, port warden, and a few passengers. Here at Malacca is quite a large plantation of *Hevea* owned by a Chinaman, who speaks good English and who is the proud possessor of some 300,000 rubber trees. I wanted mightily to have a look at it, but time did not permit.

Again in Singapore I called upon Mr. Murray, a partner of Mr. Bailey's, who had in the beginning smoothed my way appreciably, had tiffin with him, at the Singapore Club, and then hurried to get my passage arranged for on the *Malta* to Hong Kong. By the way I took from Mr. Murray two bottles of oil made from the nuts of the *Hevea*, which were packed as carefully as possible and which were all right until the strenuous baggage smashers of the United States got hold of my luggage—and then the bottles broke.

I was also fortunate enough to have the time for another rickshaw ride over Orchard road to the Botanic Gardens. Here I found that Director Ridley's right hand man, Mr. De Alweis, had made a set of photographs for me that embraced the whole of their varied growths of India-rubber and *Gutta-percha* trees. One of the most striking of these was the photograph of the *Hevea* seed beds, in which the effect of various manures was shown. The experiments covered the use of poudrette, mixed lime and soil, burnt earth and leaves, cow dung, and burnt earth. As may be seen in the illustration on this page, the rubber trees planted with cow dung far surpassed all the others in height and sturdy growth.

The next day I said farewell to Singapore and was well on my way to China, Japan, the Sandwich Islands, San Francisco, and home; that in brief is the finish of my visit to the rubber plantations in the Far East.

On my way home I met those who were deeply interested in rubber culture, as a future development of the rich lands in French Indo China, British North Borneo, and Sumatra—in fact, wherever there is the conjunction of proper soil, climate, and cheap labor. Even the Japanese are preparing to plant rubber in Formosa. In the Philippines there is little present interest, as the shutting out of Chinese and Javanese labor makes the installation and care of a plantation far too costly to be remunerative.



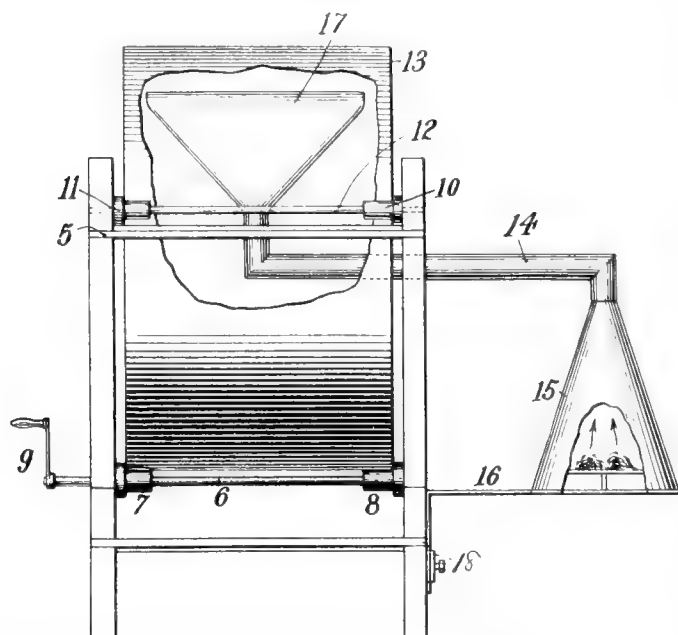
YOUNG "HEVEA" SEEDLINGS IN BEDS, IN MANURE TEST.

[No. 2.] Poudrette. [No. 3.] Mixed Lime and Soil. [No. 4.] Burnt Farth and Leaves.
[No. 5.] Cow Dung. [No. 6.] Burnt Earth.

DANIN'S MACHINE FOR SMOKING RUBBER.

THE increasing interest in bringing the production of India rubber under intelligent supervision, in forests as well as on plantations, is evinced by the issue of numerous patents for mechanical appliances for use in connection with extracting *latex* or its conversion into rubber. Herewith is reproduced the drawing accompanying the specifications of United States patent No. 765,167, issued July 19, 1904, to João Roso Cardoso Danin, of Pará, Brazil, for "an apparatus for treating raw rubber," or, more properly, for smoking the *latex* of such varieties as are susceptible of coagulation by the use of smoke.

The operation of this device is based upon the discharge of heated products of combustion upon a mass of *latex* on the inside of a rotating cylinder, but the inventor does not claim broadly to cover this principle in his patent, it having been embodied in the invention of Manoel Vianna Coutinho, of Brazil, illustrated in THE INDIA RUBBER WORLD, March 15, 1894 (page 170), and protected by United States patent No.



531,781. The Coutinho patent is now owned by Senhor Danin, who has sought to add certain improvements to the device.

In the drawing 13 relates to a revolvable cylinder or drum, suitably supported, and rotated by means of a shaft 6, carrying friction rollers 7 8, and having a crank 9. The ends of the drying drum are provided with circular openings, of three-fifths of the diameter of the drum, through one of which extends a conduit 14 by means of which smoke is introduced, the *latex* having first been introduced through one of the open ends of the cylinder. Under the outer downwardly turned end of the conduit is a funnel 15, under which is placed the fuel for producing the smoke. The other end of the conduit is provided with a flaring nozzle 17, through which the smoke is discharged into the cylinder. The figures 10, 11 relate to anti friction rollers, on shafts, on either side of the drum, to aid in keeping the same in position, there being no axial support for the drum.

In using the apparatus, the *latex* is poured into the cylinder, which is then rotated. The nearly fluid *latex* spreads over the inside of the circumference of the cylinder and is carried by the revolution of the latter past the discharge end of

the smoke conduit, the treatment being continued until, in the judgment of the operator, the resulting layer of rubber has been sufficiently coagulated. Fresh *latex* is then admitted, and the operation repeated, the number of successive layers thus produced being limited only by the capacity of the cylinder. When the deposit of rubber within the cylinder has become so thick as to be too close to the smoke funnel 17, as at first adjusted, the latter may be lowered, successively, by means of the support 16, working in the socket 18. One point upon which the patent specification is silent is the manner in which the coagulated rubber is removed from the cylinder.

RUBBER TRADING PROFITS IN AFRICA.

THE annual meeting of the Nieuwe Afrikaansche Handels-Vennootschap, of Rotterdam, was held on July 16, when the dividend on the trading for 1903 was fixed at 4 per cent. This is the oldest company trading on the Congo, having established a branch at Boma as early as 1860, and rubber figures to an important extent in its operations. At the above meeting the directors reported a flourishing condition of the enterprises in which the company is interested in the Congo Free State, while the affairs of the French colonial companies with which the company is associated are improving. They were confident, therefore, regarding the future. The company holds 340 shares in the Syndicat du Kasai, one of the Belgian Congo companies, out of a total of 2010 [See THE INDIA RUBBER WORLD, July 1, 1903—page 344], and these figure in the company's balance sheet at 7000 francs each, or a total of 2,380,000 francs [= \$459,340].

* * *

THE annual meeting of the Cie. Anversoise des Plantations du Lubefu was held early in the month in Brussels, when the accounts for 1903 were approved. The credit side of the profit and loss account is 68,110 francs [\$13,145 23], which is apportioned between general expenses and sinking fund. These figures mark a heavy decline as compared with the profits reported a few years ago, when good dividends were delared. In 1901 the company merged its commercial system in the Syndicat du Kasai, reserving the plantations of rubber [See THE INDIA RUBBER WORLD, October 1, 1902—page 9], and the question now comes up of dealing with the company's Kasai shares to pay its debts. Two Kasai company shares were sold during the year at 9700 francs each. It is proposed to deliver such remaining shares as it may be necessary to sell, at 9000 francs each, to a syndicate which the company's shareholders may join. The Labefu company had proposed to sell its concessions, but was informed officially that the Congo Free State was opposed to a transfer to a new company. The company retains its rubber plantations, dating from 1900. It is not hoped that these will be productive before the fifth or sixth year, at best.

* * *

THE Brussels journal *La Chronique Coloniale* says: "THE INDIA RUBBER WORLD of New York reproduces our information concerning the participation of the Société A B I R in the rubber plantations of the Malayan states, and by way of commentary proposes the question: 'Does this foreshadow the beginning of the end of large yields and large profits in King Leopold's rubber regions?' We think that in this fact we must see nothing else but the desire of the stockholders of the A B I R to share, by temporarily giving up a part of their profits, in interesting experiments which promise to be profitable."

THE MANUFACTURE OF RUBBER HEELS.

BY J. W. C.

RUBBER heels are now made by the ton. Millions of pairs are sold and used, and the demand seems constantly to grow, so that the production of this class of goods has become an item of no small importance to the rubber industry. Hence it has occurred to the writer to offer these few suggestions, in the hope that they may prove of some practical value.

The compounds used range in cost from 10 cents to 40 cents a pound. For heels not over $\frac{1}{2}$ inch in thickness it saves time to use stock "slabbed out" on the mixing mills. Many heels, however, are made from two separately mixed stocks, a cheap grade being used for the top of the heel (*i. e.*, next the foot), and another, with superior wearing qualities, for the tread. Such a combination is commonly "plied-up" on the calender, for when thus joined there is less liability of the component stocks splitting apart when in use as heels. To cut up slabs of stock preparatory for mold work steel dies are used, closely copying the size and shape of the heel. A power press controlled by a foot lever is frequently used, and one in which slabs 36 to 40 inches wide can be handled, is preferable, as it admits of rapid dieing-out across the width of the slab.

In some shops great pains is taken to trim the stock thus died-out to a specific weight, thus adding a large and unnecessary item to the cost of production. Assuming that there are no wide variations in the specific gravity of a given stock, and it is furnished in slabs of a specified and uniform thickness, as it should be, then with a proper assortment of cutting dies trimming to weight becomes a superfluous operation. Work in mill room and calender room has, however, an important bearing, as careless or imperfect work there will make weighing and trimming a necessity. This is especially true where "plunger" molds are used, as a heel or two heavier than the rest will prevent the other heels in the mold from "filling-out." Uniformity in thickness and weight of heels before curing necessarily effects percentages in cured waste. In figuring cost 5 per cent. is generally specified, although some shops allow 10 per cent. Care regarding this item will show, however, that cured waste need not exceed an average of 3 per cent. There is, it appears, such a thing as figuring this item of cured waste to too fine a point, as it is susceptible of demonstration that a heel cured with an abundant overflow, has a closer grain and will outwear one produced with barely enough stock to fill the mold cavity.

In the press room, as in other departments, production is the keynote. Each press should be so handled that its maximum capacity is attained. Heel molds are made containing from 12 to 16 cavities. A capable pressman should handle two to four such molds per heat. There is "no money" in the use of single-platen presses for curing heels. The two-platen press is proportionately better and the four-platen press the best of all, for it will accommodate the work of two men handling 16 molds between them. This is an important item where floor space and the number of presses that can be used is limited. A factory that had floor space for but 10 presses, could, with the single-platen style produce 3500 pairs of heels in ten hours; with 10 four-platen presses, 14,000 pairs.

Superintendents generally have to make the most of their factory equipment as it stands, and where this includes an open-steam vulcanizer, the output of the press room in heels may be substantially increased by beginning the cure in presses and finishing it in the vulcanizer. Let us suppose, for illustration, that the proper cure for a particular heel stock is 15 or 20 minutes. Ten minutes in the mold is probably all the time neces-

sary to perfectly mold the heel, although not to thoroughly cure it. At that time, however, it can safely be removed from mold and the cure completed in open steam, to the distinct betterment of the product, and a material increase in the number of heels turned out during the day.

There is just now a demand for a heel that will not bloom, and if the compounds give trouble in this particular, a cure of 30 minutes at 50 pounds in the open steam vulcanizer, as above suggested, will effectually dispose of the bloom. After trimming, all heels should be cleaned by washing in a hot solution of potash, then rubbed with a cloth moistened with naphtha or a small quantity of glycerine. This results in a black heel of very attractive appearance. The introduction of a heel with a piece of duck vulcanized into the wearing surface has added another item to the burden of worries carried by the factory superintendent. It can be made successfully, although at a considerable advance in cost over the plain article.

The production of a perfect heel is contingent largely upon the class of work demanded of the press room. As in all press-work, the greatest care must be taken to keep the molds clean. The pressman can accomplish this in large part, and nothing sharpens his senses so rapidly as charging him with the value of heels that are defective owing to some neglect on his part. In spite of the best oversight, however, molds will gradually accumulate a thin scale, especially in those parts bearing the name or trade mark or ornamental design. Boiling in strong potash, followed by a few minutes in a sand blast, will clean a mold thoroughly. A thin solution of castile soap (say $5\frac{1}{2}$ ounces to a pail of hot water) makes a good solution, and is in common use, and where a stock gives trouble by sticking to the mold, 1 or 2 ounces of carbolic acid will be found of advantage. Two points are to be observed if the heels are practically to fall out of the mold as soon as it is opened: Cleanliness and proper soaping. It is easy to put on too much soap. Heels have a very aggravating way of not "filling-out," although plenty of stock has been used. This should be looked for in a stock that is too dry, and in the more expensive stocks. This trouble can be overcome by placing the loaded mold in the press and allowing the stock to become softened by the heat, before actually closing the press upon it. Increasing the length of cure two or three minutes has also been tried, with good results.

A TARIFF DECISION ON RUBBER TOYS.

IN the matter of a protest by George Borgfeldt & Co. against the assessment of duties by the collector of customs at New York, the United States general appraisers decided, on July 30, that rubber dolls and doll heads are dutiable at 35 per cent. *ad valorem* under paragraph 418 of the tariff act. Kindred articles of rubber, such as figures of children with elastic cords attached thereto; grotesque, military, and other figures such as clowns, horseback riders, animals, etc., although toys, are expressly excluded from classification under this paragraph, and are dutiable as manufactures of rubber under paragraph 449, at 30 per cent. *ad valorem*. The importers contended that the articles were rubber toys, not dolls, and that, inasmuch as toys composed of rubber are expressly excluded from the provisions of paragraph 418, they are properly dutiable at 30 per cent., as manufactures of rubber. "Dolls and doll heads of whatever material" being provided for by paragraph 418, the board of appraisers undertook to decide what are dolls, and it was set forth that "rubber articles representing children, dressed or undressed, whether the arms and legs thereof are partly detached from the body or otherwise, were universally and generally known as dolls," and were dutiable as such.

THE INDIA-RUBBER TRADE IN GREAT BRITAIN.

By Our Regular Correspondent.

IN the course of an editorial in the May issue of THE INDIA RUBBER WORLD it is suggested that the limit has not been reached in the utilization of the lower classes of rubber or rubber like gums. Reference is made to the success attending the use of Pontianak, a material which

THE USE OF
LOW GRADE GUMS.

seems to be more highly thought of in America than in Europe. Though of course it is always a feather in the cap of the technologist to make satisfactory use of materials which have been overlooked or thrown aside as valueless, yet in this case of rubber there are many who look with suspicion upon the introduction into rubber mixings of low class rubber like bodies; enough damage has already been done to the trade, they say, by the efforts to utilize this, that, or the other substance instead of sticking to genuine rubber. The correct way, however, I take it, of looking at the subject is for the manufacturer to have a clear idea of the properties expected of the goods and to act strictly in accordance with what is known. Thus where elasticity and strength are of the first importance it would be supreme unwise to introduce bodies admittedly lacking these properties. This of course is a mere truism, but I mention as a prelude to what follows. Outside the rubber merchants proper there are several shipping houses in England who occasionally have parcels of rubber to dispose of. This rubber may be of very variable quality and its disposal a matter of some concern to those who are not versed in the subject. But what I wished to refer to was a plaint made to me by one of these occasional rubber merchants, that the British were behind the times because they would not buy rubber of any sort, as the Germans did. British manufacturers, my informant said, wanted brands of certain quality and would not quote at all for poor quality stuff they were unfamiliar with, while with the Germans whatever the quality there was always a quotation forthcoming. My friend seemed to think that the adaptiveness of the German to low quality rubber was necessarily a sign of technical superiority, but I was unable to agree with him. When I can have it definitely proved to me that technical training can enable a manufacturer to turn out strong elastic goods from African flake then I shall acknowledge that the Germans can beat us.

MY attention has been called to a misstatement in the few remarks I made on this subject in the July issue of these notes.

RUBBER
PAVEMENTS.

The facts of the case, as regards the rubber pavement at Euston, are that it is under the hotel and not actually at the station, and that the original pavement was the work of Messrs. Charles Macintosh & Co. and not the North British Rubber Co. Some relaying, however, which has recently been done was carried out by the latter company. As showing further that Messrs. Macintosh are by no means novices at this class of work, I may mention that previous to laying the Euston pavement they laid some down under the Midland Grand Hotel, St. Pancras, in 1875. [See an article on this subject on another page of this issue.—THE EDITOR.]

A PARAGRAPH headed "Killed Through Wearing India-rubber Heels" caught my eye in one of the papers. According to the evidence the deceased slipped on the stairs and broke her neck. The coroner having examined the shoes said the heels were more like the screw of a steam launch than anything else, they would revolve so easily. A witness said she had repeatedly warned

the deceased about wearing those heels as they were very unsafe indoors. This seems to me rather a severe indictment of the revolving heel; personally I know nothing of them, and by some remarks recently made in this Journal, I gained the impression that the use of the term revolving was wrong, as the heels were merely capable of being turned round when one side was worn. Evidently, however, this is not correct, but as attention has now been prominently drawn to the undesirable nature of this type of heel the time is opportune for makers of non-revolving heels to advertise the merits of their goods.

DESPITE the undoubted progress made by more than one system of wireless telegraphy, the efflux of time has shown that shareholders in the submarine telegraph companies have no need to be unduly anxious as to the value of their holdings. The fact that nearly all European governments are exercising control over the installation of the new systems on account of their real or supposed danger in times of warfare is a somewhat awkward matter for the several companies and a rather unexpected development. Another important fact in the situation is that the Eastern Telegraph Co. have announced their intention of using a wireless method in certain parts of their system where its application promises to be of great utility.

WIRELESS
TELEGRAPHY.

I UNDERSTAND that the Russian-French Rubber Works, "Provodnik," of Riga, Russia, are about to engage in the rubber thread branch, and that plant is about to be installed on a large scale. Mr. William Coulter, who was formerly engaged in this manufacture with Messrs. Charles Macintosh & Co., Limited (Manchester), has been appointed manager and has left England for the scene of his new labors.

NEW BRANCH OF
MANUFACTURE.

I NOTICED lately an advertisement in some journal of a large rubber factory requiring a superintendent for its thread department. I imagine that the right man will be very difficult to obtain, that is if he is to be one who is an expert in the manufacture throughout.

RUBBER
THREAD.

In the few factories in England where this article is made the superintendence is sub-divided among responsible foremen, each of whom understands his own department but accepts no responsibility for the work of other departments. Thus, one man will go as far as the mixing, rolling, and vulcanizing; another looks after the cutting, and the third the winding into hanks and the careful testing which is necessary to detect under or over vulcanization. I imagine that the men who understand the whole manufacture are very scarce, and it is to be hoped that the firm advertising will do better than a certain British firm which entered lightly upon the manufacture, only to give it up again after a period of disaster.

AS on one or two former occasions, my notes of this month are shorter than usual owing to traveling interfering with ordinary business procedure. I am posting this from Copenhagen, a town of considerable size and interest, but which does not seem to contain anything particularly worthy of comment here. The rubber factories of Denmark and Sweden where I am proceeding on my way north, are not situated in the capital towns, but in somewhat out of the way places, thus making a visit to them rather a tax on the tourist's time. The weather here as in England and Germany continues very hot, and not at all conducive to the interests of the waterproof trade.

COPENHAGEN.

RUBBER
HEEL PADS

GERMAN VIEWS OF THE RUBBER CRISIS.

FROM THE "GUMMI-ZEITUNG," AUGUST 5.

A DIRECTOR of one of the largest Berlin rubber goods factories has expressed himself as follows in the *Berliner Tageblatt*:

The critical situation in which the German rubber factories are placed at present may be ascribed to two causes—overproduction and the constantly increasing disproportion of the prices of crude materials and the manufactured goods. The overproduction may be explained by the fact that within the last three years many new factories have come into existence which were determined to transact business at any price in order to obtain a foothold, and has been made still greater by the fact that some German electrical companies, who were formerly extensive buyers, have for the past two years manufactured their own requirements in rubber goods. The abnormal rise in the price of raw stuffs was inaugurated about two years ago. Pará rubber, quoted at the close of 1902 at 2s. 10d. per pound, had, in December, 1903, advanced to 3s. 9½d., and at present is quoted at 4s. 11d., which shows that within eighteen months the price has nearly doubled. This rise in prices was not caused by scant supplies (which have slowly increased), but solely by the manipulations of English dealers in crude rubber. The English market is dominated by perhaps less than ten firms, who tenaciously cling to the high prices. Occasionally, by cornering the market, they create an artificial scarcity of supplies; this is especially applicable to one of the largest rubber firms of Liverpool.

It has been impossible for the German rubber manufacturers to raise the price of their manufactures to anything nearly proportionate. The factories in general have continually sustained losses, having been compelled to buy materials at advanced prices to fill contracts estimated at a lower figure. Some of them sustained losses by the failure of firms, with whom they closed contracts for the delivery of crude rubber to fulfil their obligations, owing to the severe rise in prices. The idea of forming a *kartell* was advanced, but, owing to the fact that in Germany there exist about 55 rubber goods factories, each of them making specialties, it has been abandoned. To show how difficult it is to bring the several factories together, it may be mentioned that at a conference recently called by the *Verein Deutscher Kautschukfabrikanten* for the purpose of advancing the prices of rubber goods, only twelve factories were represented; the other factories, though fully aware of the precarious condition of the rubber industry, refused to attend. That it was possible to form in Austria, a few months since, a *kartell* of rubber goods manufacturers, is owing to the fact that in Austria only eight rubber factories exist. Nevertheless the German manufacturers, in dealing with the patrons of the *kartell*, undersell the latter.

The condition of the German rubber goods factories, especially of those who are financially weak, has become almost unbearable, and will improve only if, by some means now unforeseen, the ring of the English rubber dealers could be broken, or, if through force of conditions the several factories, without combining, would advance their prices. Besides this, the Berlin factories are facing a strike, so that likely they will have to give up with troublesome wage conditions.

This summary gives our readers no new information, but only the identical arguments which we, for years, have advanced as being essential to the development of the German rubber industry. The only thing new is the assertion that the crude rubber prices are fixed and held up solely by the Liverpool dealers, to which we cannot unconditionally agree. That speculation acts a certain part—and in what raw product, nowadays, does it not—is without doubt, but it does not act the dominant part. Speculation certainly could not maintain prices lastingly at such enormous heights, without other favoring conditions. These conditions include the indisputable fact that the receipts of Pará rubber have not increased within the past few years, but remained almost without change, while the demand, aided by the automobile industry, has increased enormously. The best proof of this is that it is impossible

anywhere to store up large quantities, and in no market, Liverpool included, are there larger supplies than in former years; on the contrary, they are materially less.

But this (the assembling of large stocks) would be a natural consequence if the prices were forced up by juggling. Furthermore, the selling prices at Pará, and the prices at London, Hamburg, New York, and Antwerp, which always correspond with those of Liverpool, prove that it is the unfavorable conditions existing in supply and demand of good rubber sorts, which regulate the price. The rise in prices of inferior sorts, which, comparatively, even exceed those of Pará, is still further proof for this assertion. We are crediting the Liverpool dealers with great influence, but that they are enabled to rule all the rubber markets of the world and solely and alone fix prices, is beyond our belief.

It may be possible that the speculators can force the prices up a few pence beyond what actual conditions warrant, but to maintain artificially for years such an enormous advance, in all rubber sorts and in all markets, is impossible; natural conditions, playing an important part in the crude rubber trade, are too weighty for that. Great efforts have been made in times past for this purpose—the New York trust is still in memory—but they have stranded on the fact that the crude rubber market cannot be ruled from one particular point. Though it is desirable to break the "ring of English rubber dealers," it is doubtful that the rubber goods manufacturers would profit thereby for any length of time. The receipts would not be increased thereby and the demand would not stop. Much more could be gained if our industry should succeed in locating new sources of rubber supplies, and our manufacturers should assist all efforts made to cultivate rubber plantations, which is the only means to prevent a scarcity of supply and restore normal price conditions.

Until then, only one remedy is left to our manufacturers for the present difficult situation, and that is a corresponding rise in selling prices. There is no other way, and it must eventually be taken, no matter how difficult it may seem. A factory which to-day does not advance prices sacrifices all its profits and transgresses the principle on which all healthy business is based, that the prices must be in unison with the cost of material and manufacture.

WAGES IN THE RUBBER SHOE INDUSTRY.

THE July *Bulletin* of the national bureau of labor, at Washington, is devoted to "Wages and Cost of Living," a mass of statistical data being presented, with the indication that the increase in wages which clearly has taken place in many industries since 1890 has, on the average, more than kept pace with the increased cost of living which is proved with only a little less definiteness. The *Bulletin* contains very little data pertaining to the rubber industry. In fact, returns are presented from only two rubber factories (unnamed, of course), and the substance of such returns are condensed in the table below. It should be mentioned that wages given are for a week of 60 hours, and are computed by multiplying the average hourly wage for each class of workers by 60:

WORK.	1893		1903.	
	Number.	Wages.	Number.	Wages.
a Bootmakers Male.....	34	\$17.86	33	\$21.48
a Cementers Female....	18	7 15	35	8.05
b Cutters M.....	30	16.28	35	15.16
a Grinders M.....	28	9 15	33	8.15
b Mixers M.....	16	9.57	15	9.85
a Shoemakers F.....	132	7.55	185	8.00

a—Data from one establishment.
b—Data from two establishments.

INDIA-RUBBER GOODS IN COMMERCE.

AMERICAN exports of rubber goods continue to grow, but not at the same rate recently as imports of foreign manufactures of India-rubber and Gutta-percha. According to the customs returns, values for two years past have been as follows, showing the United States to have become actually less able to supply its own requirements in these goods:

	1902-03.	1903-04.
Value of exports.....	\$4,176,351	\$4,435,590
Value of imports....	891,170	1,157,042

Excess of exports.....\$3,285,181 \$3,278,548

Considering that the rubber industry, in most of its branches, had its origin in the States, and that no article of manufacture of rubber can be imported without a substantial duty, levied for protective purposes, the question seems to be in order, Why should the Americans be going backward in the manner indicated by the above figures?

EXPORTS FROM THE UNITED STATES.

THE following is an official statement of values of exports of manufactures of India-rubber and Gutta-percha for six fiscal years, ending June 30:

YEARS.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTAL.
1903-04.....	\$879,476	\$1,086,364	\$2,469,750	\$4,435,590
1902-03.....	819,985	1,056,491	2,299,875	4,176,351
1901-02.....	634,146	1,046,315	1,781,941	3,462,402
1900-01.....	565,726	724,015	1,727,527	3,017,268
1899-00.....	541,830	420,746	1,405,212	2,367,788
1898-99.....	(a)	260,886	1,504,499	1,765,385

[(a) Included in "All Other" prior to July 1, 1899.]

The number of pairs of rubber footwear exported during the six years has increased as follows:

1898-99.	1899-00.	1900-01.	1901-02.	1902-03.	1903-04.
486,586	762,016	1,469,100	2,594,688	2,307,401	2,310,808

Exports of reclaimed rubber amounted in value to \$534,500 for the last fiscal year, as against \$404,586 for the preceding year, and \$362,721 two years ago.

SHIPMENTS TO NON CONTIGUOUS TERRITORIES.

DESTINATION.	Belting, Packing, and Hose.	Boots and Shoes.	All other Rubber.	TOTALS.
<i>Alaska:</i>				
1902-03.....	\$30,278	\$90,050	\$15,654	\$135,982
1903-04.....	37,730	85,367	15,739	138,836
<i>Hawaii:</i>				
1902-03.....	\$29,396	\$ 7,436	\$27,483	\$64,315
1903-04.....	36,761	11,679	32,508	80,948
<i>Porto Rico:</i>				
1902-03.....	\$4,855	\$ 1,386	\$12,445	\$18,686
1903-04.....	9,085	254	16,797	26,136
<i>Philippines:</i>				
1902-03.....	\$20,692	\$ 2,396	\$35,773	\$58,861
1903-04.....	32,835	4,553	36,402	73,790
<i>Totals:</i>				
1902-03.....	\$ 85,221	\$101,268	\$ 91,355	\$277,844
1903-04.....	116,411	101,853	101,446	319,710

IMPORTS INTO THE UNITED STATES.

	1901-02.	1902-03.	1903-04.
India-rubber goods.....	\$449,756	\$665,972	\$821,562
Gutta-percha goods....	127,780	225,198	335,480
Total.....	\$577,536	891,170	\$1,157,042
Reexports.....	13,173	8,656	4,704
Net Imports.....	\$564,363	\$882,514	\$1,152,338

American imports of rubber goods were treated at length in the issue of this Journal for March 1, 1904 (page 204).

AUSTRIA-HUNGARY—OFFICIAL RETURNS.

THE customs returns for January-June, 1904, permit the following comparison to be made of the value of imports and exports of rubber goods for the first six months of four years past, values being converted into United States money:

	1901.	1902.	1903.	1904.
Imports.....	\$692,390	\$643,287	\$734,823	\$ 800,514
Exports.....	765,789	796,693	977,250	1,270,250

It will be seen that the exports, already larger than imports in 1901, have grown more rapidly in the succeeding years. No special line of imports can be mentioned as having shown a steady increase in values. But there has been a marked increase in values of exports of hard rubber goods, shoe elastics, rubber footwear, and some other lines.

EXPORTS OF RUBBER FOOTWEAR, BY WEIGHT.

[First Six Months of Three Years.]

To—	1901.	1902.	1903.	1904.
Germany.....	kilos 70,600	49,100	70,400	70,400
France.....	19,700	24,800	10,900	10,900
Great Britain.....	17,600	31,000	42,400	42,400
Turkey.....	3,300	7,400	29,700	29,700
British East India.....	27,900	72,100	78,900	78,900
Egypt.....	1,200	3,900	6,200	6,200
Other lands.....	28,200	19,700	22,200	22,200
Total.....	168,500	208,000	260,700	260,700
Value.....	\$136,822	\$168,896	\$211,688	\$211,688

EXPORTS OF HARD RUBBER GOODS, BY WEIGHT.

To—	1901.	1902.	1903.	1904.
France.....	kilos 19,200	31,200	28,100	28,100
Germany.....	11,800	17,000	27,500	27,500
Great Britain.....	19,100	39,700	21,300	21,300
Hamburg free port.....	17,500	16,700	36,500	36,500
Turkey.....	1,300	8,100	30,400	30,400
Switzerland.....	8,100	8,500	16,000	16,000
Other lands ..	31,700	35,000	36,400	36,400
Total.....	108,700	156,500	196,200	196,200
Value.....	\$176,547	\$254,156	\$318,629	\$318,629

VALUES OF EXPORTS OF ELASTIC FABRICS.

	1902.	1903.	1904.
Shoe elastics.....	\$ 85,588	\$ 81,484	\$108,402
Other goods.....	115,826	121,922	112,320
Total.....	\$201,384	\$203,406	\$220,722

RUBBER NEWS FROM COLORADO.

THE American Crude Rubber Co. (Colorado Springs, Colorado), according to the *Denver Republican*, announce that no less than ten factories will be operating within 18 months, extracting rubber from the native rubber shrub, with a daily capacity of 2000 pounds each. The cost of such rubber is estimated at 30 cents per pound and the selling price at 90 cents, promising a daily profit from the ten factories of \$12,000. One factory is reported to be already in course of erection at Buena Vista, Colorado, where the company have a franchise to erect also an electric plant and street railway. A show window on a Denver street has contained lately a number of specimens of rubber in the form of boot heels and other molded goods, made from the product of the company named above.

The Colorado Rubber and Improvement Co. was mentioned in this paper last month as having been organized by citizens of Columbia City, Indiana, to operate at Buena Vista, Colorado. The *Columbia City Mail* reports that the work of the new company has been stopped, on account of the rivalry of the two Colorado companies already in the field, each claiming a monopoly of working the rubber shrub, under patents. The *Indiana paper* says: "The Columbia City gentlemen who are interested in the concern believe that there is lots of profit in the enterprise, and they are strengthened in the belief by the fight the other companies are making for a monopoly."

EUREKA FIRE HOSE CO. AT THE WORLD'S FAIR.

THE exhibit made by the Eureka Fire Hose Co. (New York) at the St. Louis exposition is a very attractive one, and will well repay a visit to Machinery Hall, where it is located in Aisle A, Section 28. The exhibit consists primarily of a series of handsomely polished oak cases, 7 feet high, mounted upon a raised platform of the same material, 25 feet long and 12 feet deep.

A flight of three steps leads up to a large central case, on top of which is a square platform supported by a number of 30" Underwriters play pipes. On this platform is placed a large coil of the company's brands of fire hose—"Eureka," "Paragon," and "Red Cross"—the whole surmounted by an immense golden eagle, representing the widely known trademark of the Eureka company. The entire height of the exhibit is 20 feet or more.

The cases, five in number, are arranged to show all the various products manufactured by the Eureka Fire Hose Co., at their factory at Jersey City, and include a complete line of fire hose, mill hose, jacket hose, steam hose, refining hose, garden hose, etc., of which they are the largest manufacturers in the world.

On top of the three central cases is an assortment of brass work that is especially attractive, consisting of Underwriter play pipes in the center of each, with play pipes of graduated sizes on either side. Above one of the side cases are shown expanding rings from 6" to 1" diameter and on another is an exhibit of spanners, wrenches, and the like, all made of solid brass. At one side of the platform is placed an interesting assortment of couplings arranging from 6" to 1" diameter, and on the other side, various other makes of couplings of 2½" diameter manufactured by the Eureka company.

A feature of the exhibit is a tree 25 feet in height, the trunk and branches of which are covered entirely with Eureka hose, ranging from 6" water boat fire hose down to ½" garden hose. Another part of the display which attracts considerable attention is a huge spear shaped standard 30 feet high, covered with hydraulic mining hose rubber lined and unlined, arranged in sizes from 12" to 5"; also 7" to ½" linen hose and razor strap fabrics, fire hose from 6" water boat fire hose to 1" chemical engine hose, mill hose, hydraulic hose, and

electric covering. This feature of the exhibit shows about two hundred 4" samples of fabrics manufactured by the Eureka Fire Hose Co., which are regularly carried in stock or made to order.

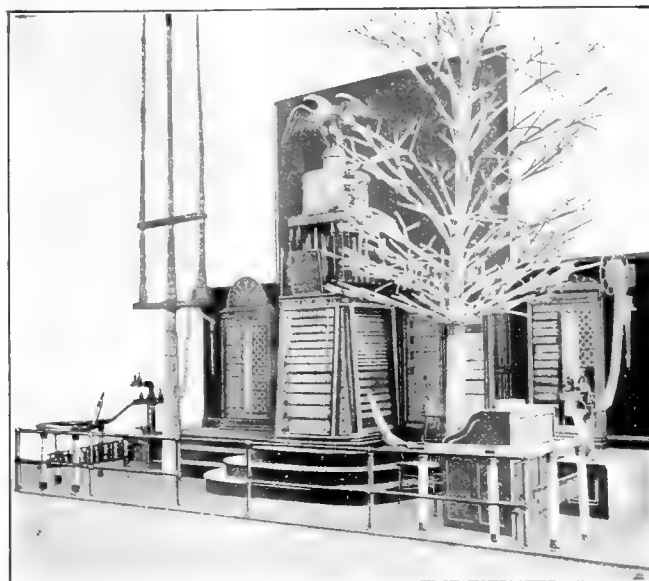
In one of the cases before mentioned is a section of the first seamless circular woven multiple fire hose ever made, and which was woven in 1875 by Mr. B. L. Stowe, now vice president of the Eureka company. There is also a piece of the first circular woven multiple fire hose rubber lined, which was made in 1875, and the rubber in which apparently is yet in good condition. There are also samples in the same case of seamless canvas hose from 12" to 5" in diameter.

The entire exhibit is encircled by an unique railing made of fire hose, arranged to leave an opening in front at the center, where the hose terminates with Eureka play pipes. This railing starts at the back of the exhibit from either side leading from iron standards, one of which supports a hose reel and the other a hose rack of the latest design.

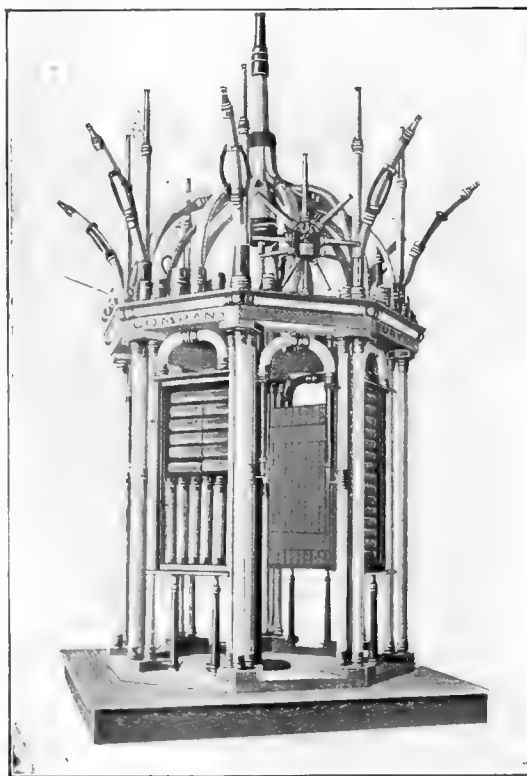
Altogether the exhibit is even more attractive than the splendid displays made by the same company at the Paris and Buffalo expositions, at which they were awarded gold medals.

* * *

THE Eureka Fire Hose Co. have a secondary display in Chief Hale's Fire Fighting Exposition at the St. Louis fair. It consists of a large and attractively designed pagoda, standing more than 20 feet high. Four of the eight sides are utilized for doors or entrances, in the shape of arches formed with sections of Eureka hose, while the alternate arches are occupied by cases showing samples of Eureka fire hose and other products. The roof, which is formed almost entirely of play pipes, is most ingenious in its construction and shows a dome surmounted by a play pipe of large proportions. The exhibit is built up in its various sections, of pipe couplings and other fire department materials, manufactured by the Eureka company.



EUREKA FIRE HOSE CO.'S EXHIBIT.



IN THE FIRE FIGHTING EXHIBITION.

At the annual meeting of the American Chiclé Co., in Jersey City, the president reported that during the year ended June 30 dividends had been paid amounting to \$900,000, and \$211,000 added to the surplus, which amounts now to \$988,000. The capital is \$3,000,000 preferred and \$6,000,000 common.

CHICAGO POLICE INVEST IN RUBBER.

THE most novel undertaking in rubber culture yet reported is that of The Police and Firemen's Mexican Plantation Co., of Chicago, incorporated under the laws of South Dakota, May 7, 1904, with a capitalization of \$1,853,000.99. The company have acquired 6177 acres of land, in a tract nearly square, lying on both sides of the Tulija river, in the department of Palenque, state of Chiapas, Mexico, near the properties of Orizaba Rubber Plantation Co. (Chicago), and of several other similar enterprises. While the membership of the new company is comprised mainly of the police and firemen of Chicago, it is understood that the mail carriers and postal clerks in that city will also become interested, and outsiders will not be deprived of an opportunity to invest. Each class of investors, however, will form a distinct section in the organization, and thus far the Police Section has been most thoroughly developed. It was among the police, by the way, that the undertaking had its start.

In the first place, there was organized in Chicago, in 1901, a Policemen's Protective Association, which came to have a membership of 2000, though its existence was opposed by the city authorities. The attempts to disrupt the organization finally led to proceedings in the courts, where, on the final appeal, it was decided that the police of the city could not maintain an organization for self protection unless there were property rights involved. This suggested to the force the investment of their fund in real property, with the result that they were advised by persons interested in rubber planting in Mexico to look in that direction. The old policemen's association ceased to exist on June 29, 1903, and a call was issued for investors in what has become the rubber planting company named above. The firemen were invited to join, and immediate responses were had from 2100 policemen and 962 firemen.

The new company have issued a prospectus similar to those of other rubber planting companies, shares being issued to be paid for on the installment plan, as in the other companies, and arrangements have been made to establish and conduct a plantation on business lines, with a view to making it a source of profit. An official of the company informs THE INDIA RUBBER WORLD: "The *personnel* of the board of directors are business men of the highest type and men of confidence, thus assuring the stockholders that the administration of affairs will be conducted to the best of their ability." The officers are: Thomas J. Dawson, president; Arthur F. Selleck, D. D. S., vice presi-

dent; John S. Kane, secretary; John Powers, treasurer; Thomas L. Foley, counsel. These are business and professional men, and not connected with the public service. The chairman of the Police Section is Thomas C. Kane and the secretary Frank J. Sullivan. The company have offices in the Hartford building, Chicago, of which the *American*, of that city, says: "They have been fitted up to serve as a club for the shareholders, and hundreds take advantage of them. One of the objects of the organization is the promotion of mutual good fellowship."

From the "By-laws and Rules of Order of the Police Section of the Police and Firemen's Mexican Plantation Co." one might infer that all the objects of the old policemen's association may be as well carried out under the new as under the old

régime. In this connection may be mentioned a publication in the *Chicago Inter Ocean* of August 5, which intimates that charges of insubordination may be made against members of the police and fire departments for maintaining an organization in spite of the prohibition by the city authorities. The fire chief was reported as saying: "We can't refuse to let a man invest his money, but the moment it can be shown that it tends to insubordination in the department, it should be squelched."

APSLEY RUBBER CO.
AT ST. LOUIS.

THE Apsley Rubber Co. (Hudson, Massachusetts) have a creditable display of their boot and shoe products at the St. Louis World's Fair, in Block 19 A, East, just south of the court dividing the two big wings of the Palace of Manufactures. The exhibit is comprised in an octagonal case of mahogany finish and plate glass. Handsome beveled plate-glass signs appear in all the eight windows, bearing the name of the Apsley Rubber Co., the tricolored "Dry Shod" trade-mark of the company, and the names of



APSLEY RUBBER CO.'S EXHIBIT AT THE WORLD'S FAIR.

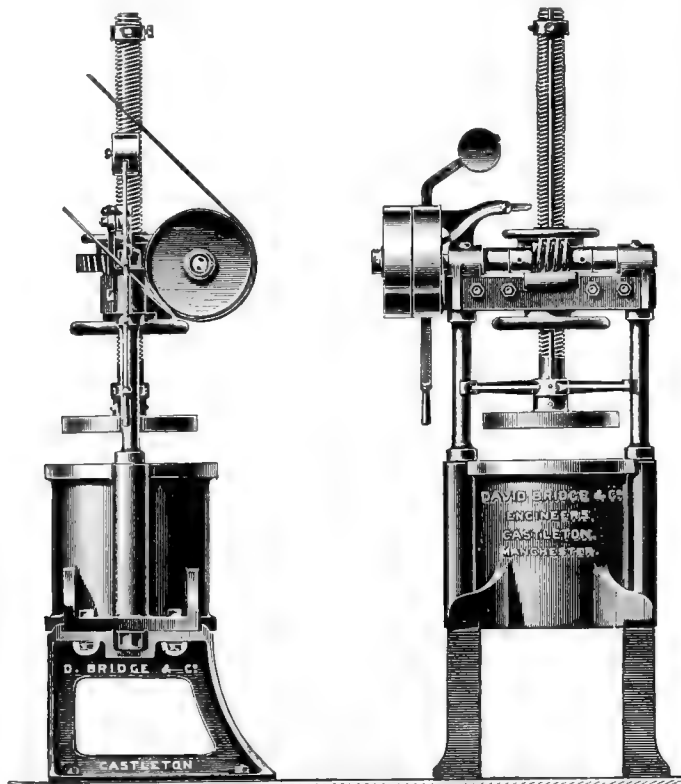
their Western agents—M. D. Wells & Co., Chicago. A pyramidal display fixture occupies the center of this showcase, upon which are hung in an attractive way samples of every line of rubber shoes made by the Apsley company; while surrounding this, and on the floor of the showcase, are samples of the boots and arctics made by the company. The specialties peculiar to the Apsley factory are marked and labeled, and show off most effectively in the display. For instance, the Apsley "Washstand" boot is prominently placed, and attention directed to the details of its manufacture and the uses for which it is particularly designed. Similar treatment is accorded to other leading specialties of the company.

RUBBER FACTORY APPLIANCES.

TWO ENGLISH SOLUTION STRAINERS.

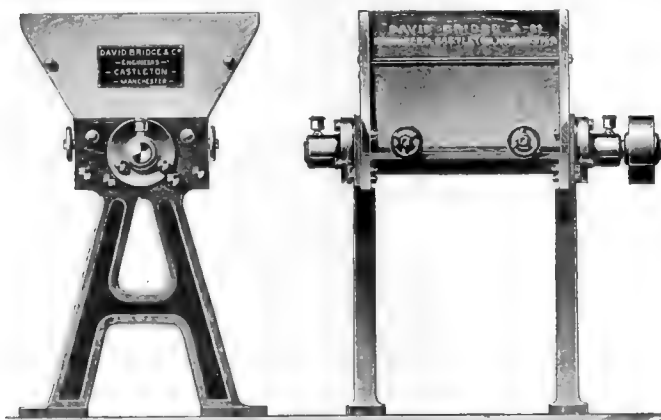
THE illustrations presented on this page relate to certain devices used in the manufacture of waterproof goods in Great Britain, which will appear novel to many of our American readers.

In the first place are shown two views of a solution strainer of the screw type, which is a very strong and efficient machine



SOLUTION STRAINER—SCREW TYPE.

for its purpose. It consists of a truly bored castiron cylinder about 16 inches in diameter and 18 inches deep, with a removable finely perforated bottom, mounted on strong standards of sufficient height to admit a can or tank beneath the cylinder. Over this perforated plate, fine removable copper gauze discs are fitted. After the cylinder has been charged, pressure is brought to bear upon it by a well fitting plunger, fitted upon the end of a powerful screw brought down by means of the worm and worm wheel, countershaft, and belt pulley arrange-



SIMPLE SOLUTION STRAINER.

ment. The machine is fitted with very strong crosshead, pillars, guide for screw worm and worm wheel, shaft, fast and loose pulley, and automatic belt shifting arrangement, all so arranged that when the plunger has reached the bottom, undue strain will not be brought to bear on the bottom plate. An arrangement by which the plunger is quickly lifted by means of hand wheel is provided, ready for cleaning and recharging.

The succeeding views relate to a simple solution strainer. This consists of a single roller fixed in the bottom of a wood hopper, against which adjustable slides, fitted with leather strips, press. The rollers are mounted on strong castiron standards, and driven by a belt pulley, suitable arrangements being made to prevent the oil used for lubrication of the bearings from getting inside the hopper. The machine is sufficiently high to admit of a good sized tin being placed underneath the roll, and drip guides (not shown in the illustrations) are supplied with the machine. [David Bridge & Co., Castleton Iron Works, Castleton, Manchester, England.]

THE PRICE OF RUBBER SHARES.

FROM "THE NEW YORK TIMES," AUGUST 14.

TO THE EDITOR OF THE NEW YORK TIMES: Will you please inform me through the columns of *The Times* why United States Rubber stocks are selling at 19¼ for the common and at 74 to 75 for the preferred, while United States Leather common sells at 7¼ and the preferred at 83? Is not the Leather stock as good as the Rubber? Why the difference in price?

New York, Aug. 9, 1904.

J. C. W.

A PART from other considerations affecting the relative values of the common and preferred stocks of the United States Rubber Co. and those of the United States Leather Co., a satisfactory explanation of the much lower price quoted for Leather common lies in the fact that there are back dividends due on the company's preferred stock to the extent of about 40 per cent., whereas the preferred stock of the United States Rubber Co. is noncumulative, so that the suspension of dividends on Rubber preferred, which lasted from 1901 to this year, when dividends were resumed, did not result in a fixed charge on the company's earnings. No dividend can be paid on Leather common until the 40 per cent overdue dividends have been paid on the preferred stock of the company, whereas a dividend on Rubber common could be declared at any time after provision had been made for the annual dividend of 8 per cent. on the preferred.

NOT PLEASED WITH CONSUL CONLEY.

TO THE EDITOR OF THE INDIA RUBBER WORLD: I am very much delighted with the position of your magazine with reference to rubber culture in Mexico. It seems to me that the legitimate rubber companies ought to combine and request of President Roosevelt that he appoint some one to take the place of Consul Conley.

Again thanking you for the interest you are taking in this great enterprise, I am,

Very sincerely yours,

C. A. WESTENBERG.

[Managing Director Chiapas Rubber Plantation Co.]

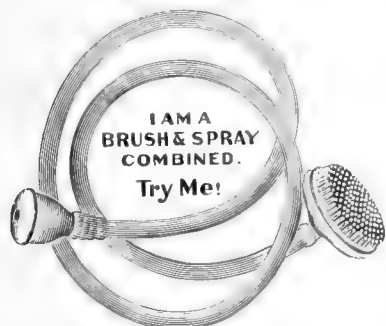
San Francisco, August 8, 1904.

THE American Rubber Co. filed incorporation papers at Santa Fé, New Mexico, on June 16, with \$200,000 capital named. The headquarters are at Tucumcari, Quay county, N. M. The object is to extract rubber from shrubs which are reported to exist in New Mexico, as well as in Colorado and Utah.

NEW GOODS AND SPECIALTIES IN RUBBER:

"MONARCH" MESSAGE BATH SPRAY.

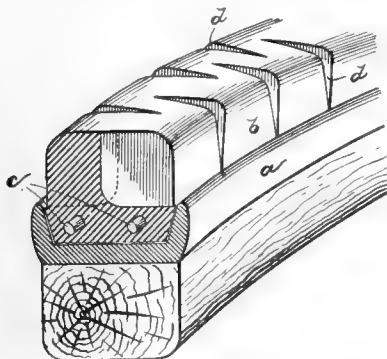
THE "Monarch" message bath spray is so constructed that it can be used as a brush and spray at the same time and attached to any faucet. The brush consists of soft rubber bristles. At the base of each bristle is a small hole which allows the water to flow past them, making a spray, the force of which can be regulated by the pressure of water. By using this spray, one may begin taking a bath just as soon as the water is turned on. It is unnecessary to have any water in the tub, and thereby a great deal of time is saved. This is essentially a sanitary bath spray, owing to the fact that the brush and spray can be easily detached from the metal back, thoroughly cleaned, and replaced. It is excellent to use for shampooing, as it massages the head and



rinses the hair. The rubber brush being of a soft velvety nature, does not scratch the skin, as is the case with bristle brushes, but is more cleansing. It merely causes the blood to circulate freely, creates a glow, and puts the pores of the body in a natural and healthy condition. The spray is supplied with connections for single or double faucets. United States patent No. 757,791, issued to V. C. Vant Woud. [The Vant Woud Rubber Co., Nos. 88-90 Reade street, New York.]

A NOVEL SOLID RUBBER TIRE.

A VEHICLE tire protected by United States patent No. 763,909, issued June 28, 1904, to Alvaro S. Krotz, Springfield, Ohio,

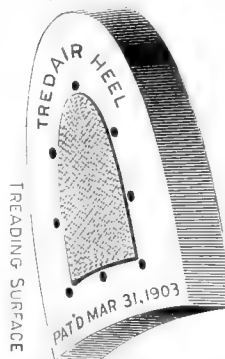


consists of a continuous band of rubber, preferably held in the channel by longitudinal retaining wires, the novel feature of the invention being a series of cavities or pockets cut in the tread, all of which is sufficiently illustrated in the drawing herewith. The inventor finds that tires formed of a continuous tread have a tendency when loaded to crowd over the sides of the retaining channel, and, when the wheel is under action, to creep in the channel; or else the longitudinal movement of the rubber will be transmitted to the base, loosening it, or tending to separate the base from the tread. The object of the pockets, in this invention, is to provide places into which the rubber can flow, and to break up the longitudinal movement, so as to keep it away from the base and its fastenings and retaining channel. The inventor says: "It has been found in practice that in well known sectional tires the sections individually are not able to withstand the extreme torsional strains. With my improved tire there are no sections as such, but the parts are interconnected, thus adding to their resisting power without destroying their individuality and resiliency, and provid-

ing an even tread surface." While the form of cavity shown in the illustration is V shaped, or sharp at their base, they may also be formed in U shape; they may also be arranged opposite each other, instead of alternating. Besides, the invention may be adapted to rubber tires of other sections than that shown herewith, and formed to be adapted to other channels or other means of retaining the rubber to its seat.

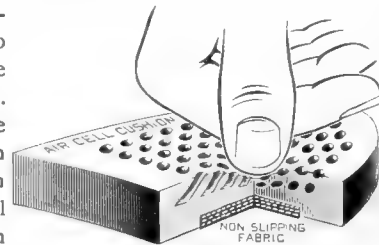
"TRED-AIR" HEELS AND HEEL CUSHIONS.

THE first of the illustrations herewith relates to a new rubber heel, sold under the name "Tred-Air," which possesses two



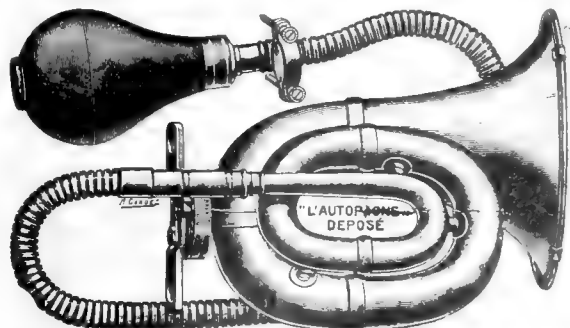
distinctly novel features—a treading surface of non slipping fabric, and an air cell construction for the body of the heel, which renders the whole lighter in weight and more springy than solid rubber heels. These heels are referred to as possessing the same advantage over the previously in use that the pneumatic tire possesses over solid tires, with respect to resiliency, though the cost is not greater than the old style heels.—A second novelty introduced by the same firm is

the "Tred-Air" heel cushion, to be worn inside the shoe. This also involves the air cell principle of construction. They are commended to those persons, among others, who object to the appearance of rubber heels on shoes. Other advantages of the heel cushion are that it can be adjusted to the shoe in an instant; that it will wear indefinitely, and can be changed from one shoe to another; and that it increases the height of the wearer and gives an arched instep. This cushion has been recommended by physicians, chiropodists, and other specialists. [Tredair Rubber Co., Boston, Mass.]



THE "AUTOPHONE" HORN.

ONE of the latest novelties for the motorist is a horn of French production, described as an "Autophone." A feature of its construction is the double turn in the tube, or metal part of the horn between the reed and the opening, as shown in the illustration. There is thus produced a much greater volume of sound than the horn of a single turn of pipe. This is not at all objectionable, however, as is thus explained: "The mere vibrating of the reed makes but a squeaky



noise, but the great resounding qualities of the metal, together with the peculiar shape of the horn, changes this sound to a deep mellow tone, which will penetrate the atmosphere for quite a distance. The tone is peculiar to itself, and can be distinguished from that of any other horn." Besides, the horn is provided with a special device for attaching it to the dashboard, and is equipped with a flexible metallic tube which is made airtight with rubber packing. On the end of the latter there is a large rubber bulb which, when compressed, forces the air out of the metallic tube, bringing it in contact with the reed, thus causing the sound. [Imported by Emil Grossman, No. 298 Broadway, New York.]

THE "N. I. R." AUTOMOBILE PAIL.

As a result of much experimenting a new automobile pail has been placed upon the market which combines many desirable features. This pail



PAIL
FOLDED.



PAIL
OPEN.

is made of rubber, folds up into compact space, taking practically no room, is light, appears to be very durable, and is convenient, as it can be operated with one hand. It can be used either for water or gasoline. It can be used like an ordinary pail, having a snout and a strainer at the top, or it can be used automatically. As the bottom of the pail comes to a point it can be lowered inside the inlet to tank. There is an automatic valve that catches on the side of the inlet and opens the pail, letting out the contents. The raising of the pail closes this valve and the flow stops. Automobilists speak very highly of it. [National India Rubber Co., Bristol, Rhode Island.]

SILK LINED SEAMLESS RUBBER GLOVE.

THIS glove, designed primarily for use in surgical operations, in consequence of having fingers reinforced with silk, has greater durability, and while in use is less apt to be damaged by the instruments, than unlined gloves. The silk lining makes it possible to wear these gloves for a longer time, as it prevents trouble from perspiration of the hands, which is very objectionable when the skin comes into direct contact with rubber. The lining keeps the skin of the hands in excellent condition, which makes these gloves especially valuable to those operating surgeons whose skin shows a tendency to be affected by eczema. The fingers of these gloves are left half unlined in order not to lessen the acute sensi-



tiveness of the surgeon's touch. The gloves, notwithstanding their silk lining, are pliant and supple, and cling to the hands as closely as unlined gloves, the palms and backs only being covered with silk material, while the other places are left free and therefore retain their elasticity. This is the invention of Professor Dr. Zweifel, and is the subject of a recent German patent—D. R. G. M. 219,391. [Phil. Penin Gummiwaaren-Fabrik, Actiengesellschaft, Leipzig-Plagwitz, Germany.]

NEW REPAIR TAPE FOR MOTOR TIRES.

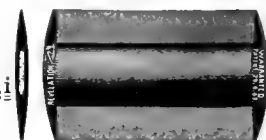
A NEW article of tire repair tape is made of specially woven duck and the best yellow rubber friction. The use of this tape is a very simple matter. The outfit includes square rubber patches. These patches can be moistened in gasoline or naphtha, placed on the puncture, the tape wound around the tire and rim and pulled taut, and then the tape is slit for about 18 inches and tied tight. This tape is made in two widths:

2 inches wide for large machines and narrower for runabouts. [National India Rubber Co., Bristol, Rhode Island.]

MORE ABOUT THE HOLLOW BACKED COMBS.

In the description given in this department last month of the "Revelation" line of hard rubber combs, mention was omitted of the method by which their distinctive feature is given to these combs. It appears that the combs are made in halves, the two sections being then joined together. To make the dies

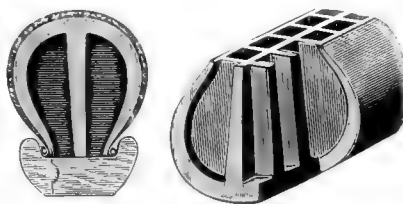
actual thickness $\frac{3}{8}$ in.
width $2\frac{1}{2}$ in.



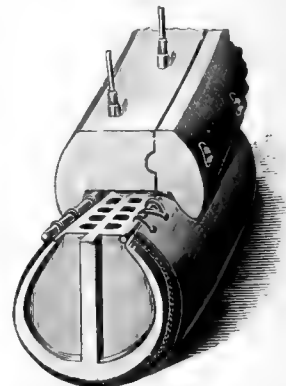
so accurate that the two parts of a comb can be adjusted to each other so that the tooth halves will fit together perfectly is certainly a delicate and ingenious bit of work. Even fine tooth combs are made by this method, as shown in the illustration herewith, which relates to a comb 4 inches in length—No. 150 in the manufacturers' list. [Harburg Rubber Comb Co.—Schrader & Ehlers, United States agents, New York.]

MILLER'S RESILIENT TIRE CORE.

THE tire core herewith illustrated is intended to be slipped into the outer cover of a detachable pneumatic tire, instead of an air tube, or it may be placed within a single tube tire. If there should be punctures in the outer cover they will not interfere in any way, as the core supplies the resiliency; the casing is for wear, and not to hold air. The interior of the core is divided into



cells by diaphragms spaced quite closely, the spaces between them being divided through the center by partitions extending from the rim to the tread. The elasticity of the rubber, both under compression and tension, is thus taken advantage of, and, as there is no air pressure, punctures have no effect on the tire, which is said to be perfectly proof against breaking down. This core has been applied thus far principally to the detachable tire casings of the Fisk and Goodyear tires. [Charles Miller, No. 309 North Water street, Binghamton, New York.]





NEW ENGLAND RUBBER CLUB—MIDSUMMER OUTING, JULY 26, 1904.

RECENT RUBBER PATENTS.

UNITED STATES OF AMERICA.

ISSUED JULY 5, 1904.

- N**O. 763,996. Vehicle tire. [Solid rubber, having projections, with metal stays, to engage in special form of rim.] C. Motz, Akron, Ohio.
- 764,009. Rubber tire. [Solid rubber, with retaining ring molded in its base.] E. S. Roberts, New York city.
- 764,018. Hose pipe coupling. C. A. Storz, Frankfort-on-Main, Germany.
- 764,091. Vehicle tire. [Solid rubber, base shaped to form flanges to engage in a special rim.] G. W. Whittemore, Cambridge, Mass.
- 764,131. Pneumatic tire valve. J. E. Keller, Jr., Litchfield, Conn.
- 764,132. Detachable flange for rubber tires. [The flange forming part of the wheel rim.] C. W. Kelsey, Philadelphia, Pa.
- 764,140. Vehicle wheel [with rim adapted for use with an elastic tire]. T. Midgley, Columbus, O., assignor to Hartford Rubber Works Co.
- 764,227. Fountain pen. A. Eberstein, Winthrop, Mass., assignor of one half to C. Brandt, Boston.
- 764,270. Vehicle tire. [Pneumatic; with rim having detachable flange.] W. P. Cronin, Boston, assignor to Diamond Rubber Co.
- 764,327. Hose coupling. C. H. Zessin, Homestead, Pa.
- 764,340. Ice creeper for horses [with rubber base]. C. W. Bolton, Fort Chase, Pa.
- 764,395. Hose coupling. F. Sweed and G. L. Farnsworth, Turtlecreek, Pa.
- 764,497. Tire and rim for vehicle wheels. [Solid rubber, special rim, and inflatable tube between them.] J. F. Pease and E. Schumacher, Darlington, England.
- 764,519. Vehicle tire. [Pneumatic; attached to rim by means of detachable flange.] N. Crane, Boston, Mass.

Trade Mark.

- 42,942. Rubber and asbestos packing. Ungarische Gummiwaaren-Fabriks A.-G., Budapest, Hungary. *Essential feature.*—The word "Tauril." Used since Jan. 3, 1902.

ISSUED JULY 12, 1904.

- 764,598. Manufacture of golf balls. [A resilient core is wound with cured rubber strips under tension, and the whole covered with strips of uncured rubber to form a shell, and vulcanized.] E. Kempshall, Boston, Mass., assignor to J. S. Dunston, Hancock, Mich.
- 764,639. Vehicle tire [pneumatic]. G. H. Sherman, Detroit, Mich.
- 764,652. Fountain pen. P. E. Wirt, Bloomsburg, Pa.
- 764,799. Massage rollers [covered with rubber]. G. M. Dunshee, Roland, Iowa.
- 764,841. Shower bath. J. P. Eustis, Newton, Mass.
- 764,855. Storm shield for carriages. E. S. Lynd, Orleans, Ind.
- 764,881. Hose coupling. L. B. Colin, Johnstown, N. Y.
- 764,936. Pneumatic tire [with detachable cover]. H. G. Fitler, Philadelphia, assignor to The Goodyear Tire and Rubber Co.
- 764,996. Syringe. T. H. Ellis, assignor to J. S. Roseberry, both of New Orleans.
- 765,015. Packing for stuffing boxes. [Asbestos treated with rubber solution, with graphite added.] R. Klinger, Gumpoldskirchen, Austria.
- 765,044. Vehicle wheel rim [for use with elastic tires]. F. A. Seiberling, Akron, Ohio.
- 765,045. Means for attaching [solid] elastic tires to wheels. [Uses longitudinal wires.] H. Sheaf, Wanstead, and H. A. Stonard, Leytonstone, England.
- 765,109. Hose coupling. F. Sticker, assignor of one half to C. A. Drucklieb, both of New York city.
- 765,110. Marking stamp. [Uses metal type, with elastic cushion between type plate and base.] F. Test, Philadelphia.
- 765,145. Ball [for golf]. J. A. Manahan, assignor of one half to S. Bookman, both of New York city.

ISSUED JULY 19, 1904.

- 765,167. Apparatus for treating raw rubber[—*i. e.*, coagulating the latex]. Joao R. C. Danin, Pará, Brazil.
- 765,225. Hose coupling. L. B. Colin, Johnstown, N. Y.
- 765,249. Hose coupling. S. J. McDonald, assignor to W. H. Lewis, both of Detroit, Mich.

- 765,261. Suspensory [embodying an elastic rubber pouch]. W. S. Wise, St. Louis.
- 765,274. Life saving appliance. [A suit to cover the body and having attached inflatable air bags.] J. M. Decker, Chicago.
- 765,290. Tire cover [of undressed leather; for pneumatics]. M. Korth, Cologne-Raderberg, Germany.
- 765,314. Window cleaner. H. A. Hayden, Jersey City, N. J., assignor to Hayden Implement Co., New York city.
- 765,324. Puncture closer [for tires]. R. W. Sampson, Quebec, Canada, assignor of one half to L. Schwab, Newark, N. J.
- 765,472. Hygienic medicated belt [embodying a liquid retainer of rubber]. T. O. Gasaway and J. S. Aydelotte, Marion, Ind.
- 765,485. Hose rack. H. J. M. Howard, Washington, D. C.

ISSUED JULY 26, 1904.

- 765,670. Double tube pneumatic tire. A. H. Marks, assignor to The Diamond Rubber Co., both of Akron, Ohio.
- 765,700. Comb cleaner. [A web of elastic material.] L. Casper, Chicago.
- 765,835. Spring tire. [Solid rubber, with a series of helical springs between the rubber and the felly.] L. Herz, Feucht, Germany.
- 765,973. Rubber compound [made by incorporating georgelite with rubber]. W. F. Hogan, Boston.
- 766,039. Horseshoe. J. E. Hoffman, New York city.
- 766,040. Belt conveyer apparatus. J. B. Humphreys, New York city, assignor to Robins Conveying Belt Co.
- 766,106. Vaginal syringe [having a compressible bulb, and a spout extending integrally therefrom, the spout being elliptical in cross section and reinforced on the inside at the top and sides throughout the length of the spout]. H. T. Foote, New Rochelle, N. Y.
- 766,119. Tire clamp [for attaching solid rubber tires to wheel rim]. P. F. Schaffer, assignor of two thirds to B. Allen, 3d, and J. P. Reilly, Germantown, Philadelphia.

Design.

- 37,057. Sheet rubber fabric. D. B. Martin, New Haven, Conn., assignor to The Falcon Rubber Co.

[NOTE.—Printed copies of specifications of United States patents may be ordered from THE INDIA RUBBER WORLD office at 10 cents each, postpaid.]

GREAT BRITAIN AND IRELAND.

PATENTS APPLIED FOR—1904.

[* Denotes Applications from the United States.]

- 13,445. A. Frankau & Co., Ltd., and H. I. Livermore, London. Tobacco pouch. June 14.
- 13,497. C. L. Tweedale, Weston, Yorkshire. Pneumatic socks. June 15.
- 13,558. H. T. Wilkins and G. Denton, London. Elastic heels for boots. June 15.
- 13,583. E. M. Preston and G. E. Jakeman, London. Means for securing hose to couplings. June 15.
- 13,600. A. Bradley, Liverpool. Composition for rubber tires. June 16.
- 13,610. J. A. H. Harper and H. G. Atkinson, Birmingham. Means for inflating motor tires. June 16.
- 13,646. F. D. Lyon and G. W. Brown, Hove, Sussex. Pneumatic tire protector. June 16.
- 13,660. C. W. Pradeau, London. Means of attaching rubber tires to wheels. June 16.
- 13,764. W. S. Cort and W. H. Stevens, London. Protector for pneumatic tires. June 17.
- 13,783. A. von Hasperg, Carlsruhe, Germany. Compartment tire for motor cars. June 18.
- 13,784. Same. Appliance to prevent bursting of air tubes of motor tires. June 18.
- 13,799. W. A. Sankey, Manchester. Rim and tire cover for motor car wheels. June 18.
- 13,799. Same. Pneumatic tire cover. June 18.
- 13,800. Same. Pneumatic tire cover and rubber strips used in manufacture of the same. June 18.
- 13,860. J. Shepherd, London. Cushion tire. June 18.
- 13,383. R. W. Brett, West Bromwich. Rubber heel and sole. June 20.
- 13,891. F. P. Whitehead, London. Fabric for pneumatic tires. June 20.
- 13,929. R. Hodgkins, London. Golf ball and method of manufacture. June 20.
- 13,935. D. Rowe and J. Stobert, London. Tire pump. June 20.
- 13,964. L. S. Dyer, London. Prevention of side slip of motor tires. June 20.
- 13,989. A. Shaw, Burnley. Adjustable heel for boots. June 21.
- 13,995. J. Campbell, Glasgow. Collapsible pneumatic globe. June 21.
- 14,041. A. H. Gale, London. Garden syringe. June 21.
- 14,090. H. M. Appleyard, Liverpool. Pneumatic tire. June 22.
- 14,100. J. M. Broad, Bristol. Prevention of side slip in pneumatic tires. June 22.
- 14,194. F. W. Schroeder and M. Lintine, London. Heel for boots. June 23.
- 14,241. Laura Lechmere, London. Tire for vehicles. June 23.
- 14,251. R. M. Meyer, London. Outer cover for motor tires. (H. Lightband, New Zealand.) June 23.
- 14,259. J. Barker, Oldham. Resilient tire. June 25.
- 14,271. W. Stewart, Birmingham. Heel for boots. June 25.
- 14,275. W. D. Hartridge, London. Anti skidding pneumatic or cushion tire. June 25.
- 14,284. H. J. Bubb and J. H. Cox, Glasgow. Heel for boots. June 25.
- 14,298. H. E. Haynes, London. Resilient tire. June 25.
- 14,316. H. T. Walker and H. W. Peart, London. Elastic tire and rim therefor. (F. Möller, South Australia.) June 25.
- 14,415. J. Birtwistle, Manchester. Pneumatic tire. June 27.
- 14,416. R. Hanna and T. O'Neill, Glasgow. Resilient tire for cycles and vehicles. June 27.
- 14,524. E. J. Davey, London. Metallic gromets for waterproof sheets and the like. June 28.
- 14,589. M. Alcock, Rosecarbery, County Cork. Tire repair bands. June 29.
- 14,605. J. G. Patterson, Manchester. Non skidding and puncture preventing devices for vehicle tires. June 29.
- 14,664. A. Ducasble, London. Resilient tire. June 29.
- 14,670. F. W. Schroeder and M. Lintine, London. Heel for boots. June 29.
- 14,673. C. E. Heys, Burnley. Pneumatic tire and protective device therefor. June 30.
- 14,687. H. Markus and The Barnwell Machine Co., Ltd., Manchester. Heel for boots. June 30.
- 14,701. R. R. L. Morgan, London. Golf ball. June 30.
- 14,725. H. E. Woodington, London. Pneumatic tire for vehicles. June 30.
- 14,749. W. T. Thompson, London. Armoured pneumatic tire. (J. T. Le Grande, France.) June 30.
- 14,760. L. Johnstone, London. Pneumatic or cushion tire for vehicles. June 30.
- 14,818. J. D. Robinson, Belfast. Automatic inflator for tires. July 1.
- 14,820. J. A. Thümling, London. Elastic tire. July 1.
- 14,905. J. Pullman, London. Improvement in motor tire. July 2.
- 14,956. Baron B. D. d'Alessandro, London. Swimming or life belt. July 4.
- 14,965. A. Beaujon, London. Anti skidding cover for tires. July 4.
- 15,031. Rose Basch and S. Basch, London. Elastic tire. July 5.
- 15,064. B. E. Hall, Liverpool. Vaginal syringe. July 5.
- 15,113. F. Trestwich, Lytham. Boot heel protector. July 6.
- 15,116. W. M. Edwards, London. Anti skidding device for motor tires. July 6.
- 15,119. A. G. Pictum, London. Twin tire and safety wheel for motor cars, to prevent accidents from puncture. July 6.
- 15,251. J. T. South, Brighton. Rubber tire protector. July 8.
- 15,263. C. Nield and two others, Southport. Detachable rubber ring for umbrellas. July 8.
- 15,230. C. Joly and R. Bougher, London. Pneumatic tire. July 8.
- 15,299. E. E. Michelin, London. Inflating valve for tires. July 8.
- 15,402. R. S. Wood, Manchester. Pneumatic tire for cycles and vehicles. July 11.
- 15,436. A. Kittel, London. Regeneration of vulcanized rubber waste. July 11.
- 15,518. A. Willis, London. Tread for wheel tires. July 12.
- 15,555. E. P. Philpots, London. Pneumatic tire for motors. July 12.
- 15,613. E. N. Lawley, London. Skid and puncture preventor. July 13.
- 15,621. M. Sluce, London. Pneumatic rubber heel specially treated chemically. July 13.

- 15,622. G. S. Ogilvie, London. Tire. July 13.
 15,653. W. Howes, London. Improvement relating to the inflation of pneumatic tires. July 14.
 15,660. G. Morton, Manchester. Revolving heel pad. July 14.
 15,715. H. T. Pearce, Gloucester. Method of fastening rubber frogs to horseshoes. July 15.
 15,765. J. N. Rice, London. Pneumatic tire. July 15.
 15,782. A. B. Williamson, London. Sole and heel pad. July 15.
 15,823. W. O. Chisholm, Glasgow. Waterproof collar and cuff. July 16.
 15,836. G. L. Scott, Manchester. Heel pad. July 16.

PATENTS GRANTED.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JUNE 29, 1904.]

- 4,788 (1903). Pneumatic tire [with one or more reserve inner tubes]. H. Coyle, West, Renfrewshire.
 4,793 (1903). Pneumatic hoofpad. J. Singleton, Manchester.
 *4,910 (1903). Self inking pad for rubber stamps. E. H. Smith, Ocean City, New Jersey.
 *4,943 (1903). Pneumatic carpet cleaning device. J. S. Thurman, St. Louis, Missouri.
 *4,949 (1903). Golf club [with head rendered elastic by a rubber cushion behind the striking plate]. M. R. Swift, Vermont, United States.
 5,120 (1903). Vehicle wheel [rendered resilient by a rubber band interposed between it and the tire]. T. Gare, New Brighton.
 5,163 (1903). Pneumatic tire. L. Peter, Frankfurt-on-Main, Germany.
 5,174 (1903). Hose coupling. W. M. Treglown, London.
 5,390 (1903). Nipple for feeding bottle. G. Reines, London.
 5,412 (1903). Heel for boots. D. A. Berry, Northampton.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 6, 1904.]

- *5,437 (1903). Washing and wringing machine. J. B. Rentzel, Manchester, Pennsylvania.
 *5,486 (1903). Bottle stopper. G. C. Marks, London. (Crown Cork and Seal Co., Baltimore, Maryland.)
 5,515 (1903). Apparatus for vulcanizing rubber goods [in long lengths]. H. Grimshaw, Clayton, Manchester.
 *5,651 (1903). Vaginal syringe. E. C. Ashmead, Philadelphia, Pennsylvania.
 5,827 (1903). Rubber handle for cricket bat. C. A. Beldam, London.
 5,882 (1903). Cushion tire for vehicles. J. Hickling, Stalybridge, Cheshire.
 6,074 (1903). Pneumatic tire. J. M. Macullich, London.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 13, 1904.]

- *6,187 (1903). Pneumatic wheel [having rubber cushion between the hub and the tire portions]. H. H. Lake, London. (A. E. Martinsen, New York.)
 6,203 (1903). Respirator for prevention of drowning. [Illustrated in THE INDIA RUBBER WORLD, March 1, 1904—page 207]. J. A. Strenken, Bremen, Germany, and another.
 6,232 (1903). Pneumatic tire. E. H. Seddon, Booklands, Cheshire.
 6,259 (1903). Boot heel protector. J. E. Atkinson, Birmingham.
 6,332 (1903). Mold for golf balls [with means for centering the core]. C. A. F. H. Gregson and J. Hughes, Hunstanton, Norfolk.
 6,371 (1903). Nipple for feeding bottle. B. Levi, Hildesheim, Germany.
 6,431 (1903). Pneumatic pad [for harness and saddlery, beds, pillows, and surgical appliances]. E. M. Aulton, Wolverhampton.
 6,440 (1903). Hose coupling. C. A. Richardson, Scholar Green, Cheshire.
 6,503 (1903). Pneumatic tire [with means for the automatic repair of the inner tube in case of puncture]. G. A. Steinberg, Paris, France.
 6,520 (1903). Waterproof garments for motoring. J. H. Anderson and Anderson, Anderson & Anderson, London.
 *6,522 (1903). Solid rubber tire [with continuous narrow central tread portion and lateral extensions alternately arranged on opposite sides of the central portion]. W. O. Worth, Chicago, Illinois.
 6,567 (1903). Fountain pen. A. Vale, Handsworth, Staffordshire.
 *6,705 (1903). Golf ball [having a core of paper, wound with rubber under tension]. K. V. Painter, Cleveland, Ohio.
 *6,706 (1903). Golf ball [composed of spongy rubber compressed in a Gutta-percha shell]. Same.
 *6,707 (1903). Golf ball [composed of spongy rubber about which rubber strips are wound under tension, and an outer shell applied]. Same.

- 6,781 (1903). Inner tube for pneumatic tires. A. J. Fearnley and J. B. Forster, Newcastle-on-Tyne.

[ABSTRACTED IN THE OFFICIAL JOURNAL, JULY 20, 1904.]

- *6,803 (1903). Vehicle tire [consisting of a rubber core wrapped with canvas and provided with stiffening ribs, the whole being enclosed in a rubber cover and vulcanized]. G. H. Raffovich, Boston, Massachusetts.
 *7,162 (1903). Means for inflating footballs. W. S. Jacobs, Malden, and W. E. Waterman, Boston, Massachusetts.
 7,270 (1903). Vehicle tire [formed by a metal spring strip, combined with a rubber tread]. F. Pawel, Hanover, Germany.
 7,285 (1903). Infants napkin. M. Laue, Halle, Germany.
 7,491 (1903). Pneumatic tire [with outer cover of leather, waterproofed with a solution of rubber]. P. Magnus, Collingwood, Victoria, Australia.
 *7,521 (1903). Golf ball. A. R. Spear, St. Paul, Minnesota.

GERMAN EMPIRE.

PATENTS GRANTED.

- 154,092 (Class 30b). Dental plate. Rosa Bauer, Cologne, July 6.
 DESIGN PATENTS GRANTED [GEBRAUCHSMUSTER].
 226,984 (Class 30d). Elastic lacing appliance for obesity. Jeanne Daine, Paris. June 29.
 226,850 (Cl. 30g). Hard rubber valve for seamless nipple for feeding bottle. Actiengesellschaft Metzeler & Co., Munich. June 29.
 227,497 (Cl. 47g). Pump valve with a metallic insertion. Otto Arendt, Newark, N. J., United States. July 6.
 228,135 (Cl. 30d). Body band of elastic and inelastic threads. W. Böttger, Jr., Apolda, and Dr. R. Lebrich, Carlstadt. July 13.
 228,058 (Cl. 63c). Motor cycle tire, with sharp longitudinal ridges to prevent skidding. Vereinigte Berlin Frankfurter Gummiwaaren-Fabriken, Gelnhausen. July 13.
 228,531 (Cl. 3b). Printed rubber ribbon for use in garments. Les Fils de J. B. Dumas, St. Etienne, France. July 20.

APPLICATIONS.

- 31,904 (Class 63e). Protecting envelope for motor tires. T. Houben, Verviers, Belgium. July 6.
 32,883 (Cl. 63d). Elastic wheel hub. M. Hofer, Bern, Switzerland. July 13.
 18,379 (Cl. 30b). Production of dental plates of rubber with wire insertion. C. E. Foster, Brighton, England, and The Dental Manufacturing Co., Ltd., London. July 20.

THE FRENCH REPUBLIC.

PATENTS ISSUED (WITH DATE OF APPLICATION).

- 339,950 (Jan. 27). M. Sartiaux. Detachable anti slipping tire protector.
 340,036 (Jan. 29). S. Wimpffen. Protective appliance for pneumatic tires.
 340,080 (Feb. 1). American Hard Rubber Co. Comb.
 340,085 (Feb. 1). Tredair Rubber Co. Elastic pad for shoe heels.
 340,092 (Feb. 1). L. Azulay. Pneumatic tire.
 340,203 (Feb. 5). J. A. Swinehart. Vehicle tire.
 340,213 (Feb. 6). L. Lessmann and M. Weinkopf. Puncture fluid for tires.
 340,217 (Feb. 6). P. Corbeau and J. Lave. Anti slipping pneumatic tire.
 340,361 (Feb. 11). H. Brookes. Protective tape for pneumatic tires.
 340,434 (Feb. 15). E. Zohlen. Tire cover and process of manufacturing same.
 340,538 (Feb. 18). C. H. Gray and T. Sloper. Mold for pneumatic or other tires.
 340,539 (Feb. 18). C. H. Gray and T. Sloper. Improvement in the manufacture of rubber covered wire or tissues.
 340,561 (Feb. 19). A. Beanjon. Detachable anti slipping appliance for tires.
 340,562 (Feb. 19). A. de Dion and G. Bouton. Detachable anti slipping appliance for tires.
 340,616 (Feb. 26). R. Péclet. Use of a metallic tissue to prevent slipping of tires.

[NOTE.—Printed copies of specifications of French patents may be ordered from R. Bobet, consulting engineer, 16, avenue de Villiers, Paris, at 50 cents each, post-paid.]

RUBBER INTERESTS IN EUROPE.

THE INDUSTRY DEPRESSED IN PORTUGAL.

THE solitary rubber goods factory in Portugal has not been able of late to make as good a showing as in some former years. The Compagnie du Caoutchouc, Monopole du Portugal, was organized in Belgium, March 5, 1898, with the exclusive privilege of manufacturing rubber goods in Portugal for ten years, with 1,000,000 francs capital. The company was financed by L'Africaine, Banque d'Etudes et d'Enterprises Coloniales, of Brussels, and a factory was erected at Lisbon. At the annual meeting of the shareholders, at Brussels, on July 19, five of those present refrained from voting to approve the balance sheet presented for 1903, and one shareholder moved for the liquidation of the company, urging that the business constantly grew worse. The executive committee, however, thought it wiser to await the results of the current year, and this view prevailed. Part of the company's assets is in shares of la Compagnie du Luabo and le Comptoir Commercial de Benguela, engaged in rubber trading in Africa, the shares of which show a decline. The different securities held by the Compagnie du Caoutchouc are now valued at only 378,688 francs, a decline since 1902 of more than 370,000 francs. The amount of business done in 1903 is reported at 44 per cent. more than in 1902, but the profit failed to cover the general expenses; the high tariff on some materials used was favorable to foreign competition, and concessions in prices had to be made in order to secure business. But the patronage of a great establishment in Lisbon leads to the hope of better things, and the volume of business since January 1 is reported to be 25 per cent. greater than for the same period of last year.

FORTY YEAR JUBILEE OF DIRECTOR BRÜCK.

HERR HEINRICH BRÜCK, the general director of the Leipziger Gummiwaaren Fabrik, Aktiengesellschaft, on July 1 celebrated the fortieth anniversary of his connection with that factory, which dates from the establishment of the business, in 1864, by the late Julius Marx. This was a pioneer concern in the manufacture of surgical rubber goods in Germany, and had attained wide renown under the name of Julius Marx, Heine & Co. by 1886, when the undertaking was transformed into a joint stock company, under the name first given above. Herr Brück has been intimately connected with the development of this important branch of the rubber industry, and by his capacity and energy has contributed largely to keeping his company in the front rank of manufacturers of surgical rubber goods. The sale of the Leipzig products is no longer confined to the home market, but extends to every leading country on the globe. Herr Brück, by reason of his age, is honorary president of the surgical rubber goods manufacturers' association of Germany. He is a member of the board of the Zentralvereins Deutscher Kautschukwaren-Fabriken (Association of German Rubber Goods Manufacturers), and of the association in the chemical industry, besides which he is an alderman of the city of Leipzig and a member of its chamber of commerce, all of which indicates the high reputation and confidence which he enjoys in industrial and commercial circles. The capital of the Leipzig company is 1,200,000 marks.

MICHELIN TO MANUFACTURE IN ENGLAND.

MESSRS. MICHELIN & CIE., the important rubber manufacturers of Clermont-Ferrand, France, announce that they are forming an English company under the name of The Michelin Tyre Co., Limited, for the purpose of manufacturing and selling their tires in Great Britain. The company will begin work at the end of October on the expiry of the "Clincher" tire pat-

ent of the late William Erskine Bartlett, No. 16,348, applied for October 14, 1890. This is the first announcement relative to changed conditions in the British tire trade, following the expiration of the important patents owned by the Dunlop Pneumatic Tyre Co., Limited, the other patent being that of Charles K. Welch, No. 14,563, applied for September 16, 1890. It has been suggested that, in view of the continued high price of rubber, there is not likely to be a rush of new firms into the tire manufacturing field, now that the protection granted by these patents has come to an end. Our English contemporary makes the interesting observation that out of the large number of British patents taken out for tires during September, 1890, the only one still in vogue is the Welch patent for wired on tires, all the others having become void; very few were kept going by the payment of the annual fees required by the patent office, after the first few years.

NOTES.

THE London offices and warehouse of the Continental Caoutchouc and Guttapercha Co. have been removed from Holborn viaduct to much more extensive premises at 102, Clerkenwell Road, E. C., where facilities exist for a large increase in business which the company anticipate in view of the expiration of the patents controlled by the Dunlop company.

—The two sons of Sigmund Beer (Julius and Robert), agent in Vienna for the Liverpool Rubber Co., Limited, have been admitted as partners in the business, the registered style of which has become Sigmund Beer u. Söhne, and the location Mariahilferstrasse 101.

—The Moskauer Gummimanufaktur-Gesellschaft (Moscow, Russia), makes no return of profits for the year 1903. The capital and reserve are reported at 1,986,000 rubles [= \$1,022,790].

MORE BAHIA (BRAZIL) RUBBER IN SIGHT.

THE German Consul at Bahia reports [May 23]: "In future calculations must be made on the basis of considerably larger receipts. In the statistics at hand no division is made of the rubber sorts, and they relate only to maniocoba and mangabeira—principally the former. For 15 kilograms maniocoba rubber 75 to 80 milreis, and for mangabeira 55 to 60 milreis, are paid at present. In the interior of the state large forests exist, which have not been exploited, their existence being hitherto unknown. The government granted, in September, 1903, a concession to Colonel Pedro Calmon Freire Bittencourt, for the legitimate exploitation of maniocoba and mangabeira within the public lands of the districts of Jequié, Maracás, and Poços. This month a large concession was granted to the two proprietors of the German firm Von der Linde & Co., of Bahia, for a district comprising 15,000 square kilometers. Towards the end of next month an expedition will be sent there to make arrangements for systematic exploitation. Although the location, ownership, and possession of the land in the interior are not quite clear, it is expected that the *cessionnaires* will take advantage of their granted preferences over others likewise interested, and, in combination with the inhabitants there, gain control of the rubber production. The opening up of a district, which had been wholly left to itself, may cause a back action in the import conditions because on exploitation of the wild cotton, which grows abundantly in the district, will likely be taken up at the same time. It is the intention of Von der Linde & Co., as also that of the Brazilian *cessionnaire* who has heretofore brought in only small quantities, through careful treatment of the product and the preservation of the forests, to obtain a clean product."

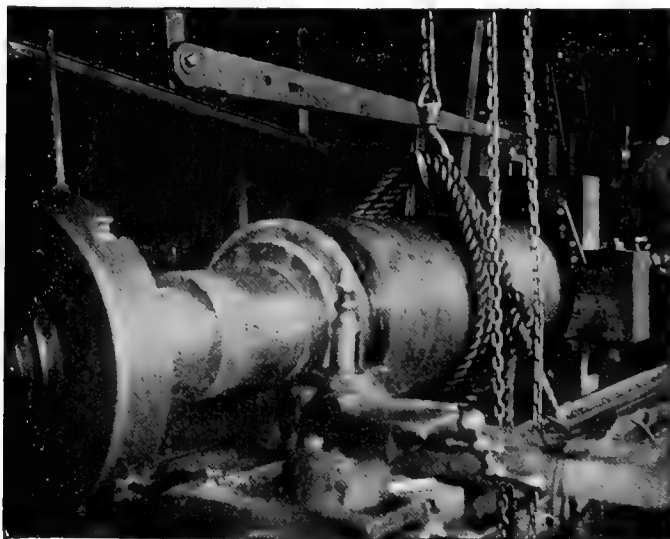
SUCCESSFUL BRAZING OF CAST IRON.

RUBBER manufacturers have ever been sufferers from the breakage of mill and calender rolls, frames, and gear teeth, which, made of cast iron could not be mended, but had to be replaced. Aside from the cost of replacement, there was often a troublesome and expensive delay while new parts were being cast, finished and delivered.



BROKEN CALENDER ROLL BEFORE BRAZING.

By what is known as the "Tichon" process any break in cast iron may be mended, leaving the parts stronger than before, and the original lines of the castings preserved intact. To do this the fractured parts are first cleansed, after which a brazing compound or alloy is applied, followed by the applica-



CALENDER ROLL AFTER BRAZING

tion of heat by means of a gas and air jet. The process is so simple that it may be installed in any factory, and for those who do not care to acquire shop rights, there are now being established brazing stations in all large centers where any type of repair work in cast iron will be done.

The cost of such repairing is far less than that of replacement, and any job can be finished in a few hours' time. In the illustrations accompanying this there is shown a 6 foot calender

roll 20 inches in diameter, which after being broken in two was successfully brazed together and is now running on fine work, showing no weakness nor sign of having been mended. This work, which is sure to be of interest to the whole rubber trade, is done by the Standard Brazing Co., No. 131 State street, Boston.

RUBBER PAVING IN LONDON.

THE frequent newspaper references of late to the great field for the use of rubber in paving streets took their start from the paving with rubber of the courtyard of the Savoy Hotel, in London, about the first of May. A recent report by the United States consul general at London, Mr. H. Clay Evans, gives some details of interest regarding the Savoy Hotel pavement, and also the older example of rubber paving under the hotel at Euston station, in London.

The paving at Euston station was laid down in 1881 by Kirk & Randall, the contractors for the extension of the hotel, at a cost per square yard stated as follows:

Concrete foundation work.....	\$ 5.60
Rubber paving, supplied by Charles Macintosh & Co., Limited.	27.10

Total approximate cost..... \$32.70

When the rubber was laid down it was 2 inches in thickness. In May, 1902, after twenty-one years' the portion on the incoming road into the station was taken up and carefully examined, when it was found to have worn down to about $\frac{5}{8}$ inch in the thinnest place, namely, at the incoming end, where horses first step onto it from the macadamized road. Other parts of the rubber were worn down to 1 inch and $1\frac{1}{4}$ inches, these places in each case being near the center of the roadway. Renewal of a portion of the pavement was therefore considered necessary.

Tenders were invited in August, 1902, from four firms, and the prices named varied from £5 11s. 4d, [= \$27.09] to £17 10s. 3d. [= \$86.22] per square yard, Messrs. Macintosh's price being £10 2s. 6d. [= \$49.26]. It may be mentioned that since 1881 rubber had advanced materially in price. The lowest tender was accepted, that of the India Rubber, Gutta Percha, and Telegraph Works Co., Limited. The total cost of the renewal in 1902 was \$28.75 per square yard, including laying, after credit had been given for the old rubber taken up. It is stated that since 1881 the average yearly cost of examination and maintenance of the Euston rubber pavement has been slightly under $3\frac{1}{4}$ d. per square yard.

The recent paving of the Savoy Hotel courtyard was done by James Stewart & Co. The area of the courtyard is 3750 square feet, of which 2195 were covered with rubber. The rubber used was 2 inches thick, weighing $15\frac{1}{4}$ pounds per square foot, and it was laid on a concrete foundation, finished with cement floating to make it smooth. The cost of the material laid, without including the foundation, was 18s. 8d. per foot, or £8 8s. [= \$40.78] per yard, which will be seen to have been considerably higher than the cost at Euston station. The rubber used at the Savoy Hotel was furnished by Charles Macintosh & Co., Limited, at a total cost of £2000 [= \$9733].

It may be added that the conditions under which the above mentioned pavements are used do not compare with those of ordinary streets. While they are in constant use, and the traffic at Euston station is very heavy, the only wheels passing over the rubber are those of passenger vehicles, and these nowadays are mostly rubber tired. Both at the hotel at Euston station and in the Savoy Hotel courtyard the rubber pavement is under a roof.

NEWS OF THE AMERICAN RUBBER TRADE.

MECHANICAL GOODS MANUFACTURERS ORGANIZE.

A MEETING of manufacturers of mechanical rubber goods, held at the Waldorf-Astoria, in New York, on the morning of Monday, August 22, was attended by representatives of a number of the leading factories, as follows:

Bertram G. Work, The B. F. Goodrich Co.
E. S. Williams and William Hillman, Revere Rubber Co.
Arthur F. Townsend and Elliot M. Henderson, Manhattan Rubber Manufacturing Co.
Charles A. Hunter, John H. Cobb, G. S. Taylor, William T. Cole, and Ernest F. Hopkinson, Rubber Goods Manufacturing Co.
Leonard J. Lomasney, The Republic Rubber Co.
Welling G. Sickel, United and Globe Rubber Manufacturing Cos.
John J. Voorhees, Voorhees Rubber Manufacturing Co.
Fred. N. Hamerstrom, Trenton Rubber Manufacturing Co., Joseph Stokes Rubber Co., and Home Rubber Co.
A. Boyd Cornell, Empire Rubber Manufacturing Co.
C. Edward Murray, Crescent Belting and Packing Co.
Alexander M. Paul, Boston Woven Hose and Rubber Co.
William B. Miller, The Diamond Rubber Co.
Benjamin F. Elson, Boston Belting Co.
Alfred Whitehead, Whitehead Brothers Rubber Co.
S. V. B. Brewster, Eureka Rubber Manufacturing Co. of Trenton.

Mr. B. G. Work was elected presiding officer and Mr. William Hillman secretary. After discussion it was voted to form a permanent organization, and those present unanimously agreed to the name The Mechanical Rubber Manufacturers' Association of the United States. The chair then appointed the following committee to draft a constitution and by-laws: Messrs. Hopkinson, Townsend, and Hillman. The following committee was appointed to draft the order of business for the next meeting: Messrs. W. B. Miller, J. H. Cobb, A. M. Paul, E. M. Henderson, E. S. Williams, and W. G. Sickel.

Among the subjects discussed during the morning and afternoon sessions were whether time guarantees should be given, terms, datings, and consignments. An adjournment was had to an early date in September, when the committees will report and recommendations will be submitted as to the best way of overcoming the evils under discussion.

CLIFTON MANUFACTURING CO.—REMOVAL.

DURING the month the Clifton Manufacturing Co. have transferred their factory plant from Hyde Park to the buildings occupied by the late Cable Rubber Co., 65 Brookside avenue, Jamaica Plain, Massachusetts. Here they will have greatly improved facilities for manufacturing. They now have modern and improved machinery for the manufacture of electric insulating tapes and compounds, mold and press work, and also for their rubber specialties, to which they intend giving more attention than ever before.

FISK RUBBER CO. IN BOSTON.

THE Fisk Rubber Co. (Chicopee Falls, Massachusetts) have leased a building at No. 226 Columbus avenue, Boston, into which they expect to move during the first week of this month. The company advise THE INDIA RUBBER WORLD: "This building is being arranged so that it will be an ideal branch for a rubber concern, and our increasing business in Boston has practically forced us up into the automobile district. We believe we are fortunate in getting this location." The lease is for five years.

THE VICTOR RUBBER CO. (SPRINGFIELD, OHIO.)

PRESIDENT DURR informs THE INDIA RUBBER WORLD that the preliminary changes and preparations incident to the reor-

ganization of this company have been completed. They are sending out notices that they are in a position to fill orders on the regular line of tires made hitherto by the company, and mats, matting, and molded specialties. He states: "The newly organized company is composed wholly of new interests, and has among its members men of wide business experience, thorough acquaintance with tire manufacturing and marketing, and ample capital. It is the purpose of the company to pursue a policy of high grade, reputable goods."

RUBBER GOODS DIVIDEND.

THE directors of the Rubber Goods Manufacturing Co., at a meeting in New York on August 4, declared the twenty-second regular quarterly dividend of 1¾ per cent. on the preferred shares, out of earnings, payable September 15, to shareholders of record September 6. The disbursement will amount to \$140,899.50.

TENNANT AUTO-TIRE CO. TO BUILD.

THIS company, located at Springfield, Ohio, and marketing puncture proof pneumatic automobile and carriage tires, made for them under patents granted to Irvin Tennant, advise THE INDIA RUBBER WORLD: "We intend to establish a factory in the very near future, as business is increasing to such proportions that our present facilities are inadequate. We are open for a proposition, and the city that offers us the best inducement is the one that will get our factory, which will mean a business of some importance to any town."

THE ALDEN RUBBER CO. (BARBERTON, OHIO).

THE reorganization of this company has now been completed, the official list being as follows: B. F. Tracy, president; William L. Raisch, secretary and general superintendent; William A. Johnston, treasurer; George C. Kohler, general counsel. The board of directors consists of the above, with the addition of Harry Musser. Messrs Tracy and Johnston are also president and treasurer, respectively, of the Pure Gum Specialty Co. (Akron, Ohio). The Alden company have been active of late and are reported to be doing a successful business.

OUTING OF THE GOODRICH EMPLOYEES.

THE annual picnic of the employés of The B. F. Goodrich Co. (Akron, Ohio) was held at Silver Lake Park on August 6, and as usual it was the biggest picnic of the season. The company provided transportation for their employés and families, and over 5000 persons spent the day at the lake. There was a program of sports during the afternoon, for which prizes were provided by the company. The factory was closed for the day.

WATERPROOF CLOTHING TRADE IN CANADA.

[FROM the Toronto *Clothier and Haberdasher*.] There can be no denying the fact that the Canadian manufacturers of rainproof and waterproof clothing are not in as favorable a position to do business now as they were before the new tariff on woolen cloth and woolen garments came into force. The cheaper cotton lines, of course, are not affected, but as there has been an increase of 6½ per cent. in the cost of imported woolen cloth without a corresponding increase in the duty on the made up garment, it is felt that an injustice has been done to the domestic manufacturers as far as the better class of goods is concerned. If the duty on the made up garment had been increased by 15 or 20 per cent. a reasonable protection would have been granted, particularly in view of the fact that labor is so much cheaper in Great Britain. All the facts and

figures in connection with the situation are being put into shape for the consideration of the government.

FRANKENBURG'S CANADIAN BRANCH.

MR. ISIDOR FRANKENBURG, the head of I. Frankenburg & Sons, Limited (Manchester, England), has been in Montreal recently, on business connected with the reorganization and extension of their Canadian branch. Preparations are being made for manufacturing in Canada in a larger way, and to make the Montreal branch a distributing center for goods made at the Manchester headquarters. A circular has been issued announcing the resignation, on August 5, of E. L. Rosenthal as manager of the Canadian branch. —Mr. Rosenthal has become associated with the London Rubber Co., manufacturers of waterproof and rainproof clothing, in Montreal.

OUTING OF THE TYER RUBBER CO.'S EMPLOYEES.

THE annual picnic and field day of the employes of the Tyer Rubber Co. (Andover, Massachusetts) was held at Revere Beach Saturday, August 13, about 500 enjoying this outing. Special cars carried all direct to the beach from Andover without change. The day was occupied with the usual sports, and the entertainments always found at this resort were most thoroughly enjoyed. A basket lunch was served, and toward evening the cars were again taken for a trolley ride of 20 miles through some of Massachusetts's charming scenery. All arrived home without accident, it having been one of the most pleasant of the many outings given by the company.

MANUFACTURE OF TYPEWRITER CUSHIONS.

THE Typewriter Cushion Key Co. (Newark, New Jersey), hitherto owning and operating the Imperial Manufacturing Co. have filed with the secretary of state of New Jersey a certificate of change of name to the Imperial Manufacturing Co. The business of the company is the manufacture of rubber cushions for typewriter keys, under patents granted in 1895 to Robert S. Graham and W. B. Savell, and also typewriter ribbons and carbon papers for all purposes. W. B. Savell is president of the company and E. M. Grower secretary and treasurer; the capital is \$120,000.

PLYMOUTH RUBBER CO.—EXTENSIONS.

THE Plymouth Rubber Co. (Stoughton, Massachusetts) have completed a fireproof structure 30 × 70 feet, to which have been removed the rubber churns formerly located in their main factory, the object being to obtain greater security against fire, as well as to provide more room. The mechanical rubber goods department started last year has grown steadily, the equipment having been increased lately by the addition of presses, pumps, and accumulators. The company have taken on the manufacture of carriage and automobile tires.

THE SWEET TIRE AND RUBBER CO.

AT the annual meeting at Batavia, New York, on August 24, the following directors were elected: John H. Ward, Ashton W. Caney, George E. Perrin, and John M. Sweet, of Batavia, and Lewis Benedict, of Attica, N. Y. John H. Ward was elected president in place of Frank Richardson, recently resigned; A. W. Caney was reelected vice president, and G. E. Perrin was reelected treasurer, with the addition of the duties of secretary, which position was filled formerly by Mr. Sweet. The result of last year's business was eminently satisfactory to the directors, and a larger business is anticipated for the coming year. The company make a specialty of the manufacture of solid and cushion rubber tires.

FISH STORY SPOILED.

A NEWSPAPER story to the effect that the two largest rubber factories in Akron, Ohio, had to stop work recently on account of the water supply pipes leading from the canal becoming filled

up with thousands of small fish, is categorically denied by the manufacturers. At the Goodrich plant one of the pipes became clogged with sediment from the canal, and there were perhaps a half dozen minnows in the sediment, and this was the basis for the story. It was no small "yarn," by the way, since the Goodrich supply main is two feet in diameter, and water is raised through it by powerful pumps, so that a multitude of fish would have been necessary to stop the flow.

NEW INCORPORATIONS.

THE Mitzel Rubber Co., August 11, 1904, under Ohio laws, to manufacture rubber goods; capital, \$100,000. This is the company of which an advance notice was given in the last INDIA RUBBER WORLD [page 393], and has been formed to continue the business hitherto conducted at Akron under the same name by Harvey F. Mitzel, who becomes president and treasurer of the new corporation. His brother, R. A. Mitzel, is vice president, and George N. Edy, secretary. The company are having a factory erected at Carrollton, Ohio, to which place their work will be transferred about October 1. They have acquired there three acres of land, and the first building will be of brick, two stories, 200 × 40 feet. It will be equipped with 7 or 8 hydraulic presses, 2 tubing machines, 3 vulcanizers, a calender, 2 mills, and a washer. The vapor, dry heat, and steam cure will be used. The production will embrace druggists' sundries, air goods, and some mechanical goods. The capacity for making dipped goods will be four times as great as in Akron.

—The Clarendon Rubber Co., July 29, 1904, under Massachusetts laws; capital, \$25,000. Incorporators: James F. Pring (president), Hyde Park, Mass.; Manter M. Jewett (treasurer), Boston; Sewall E. Newman (secretary), Winchester, Mass. Mr. Pring has erected upon the site of the former morocco works at Clarendon Hill, Hyde Park, a factory building to be used, and the new company will be ready to begin operations early this month, making mackintoshes and waterproof clothing; hospital and nursery sheeting; mold work, and proofing for the trade. For the last fifteen years Mr. Pring has been superintendent for S. Klous & Co., at the Boston Gossamer Rubber Works, Hyde Park, which works were closed recently on account of the retirement of the Messrs. Klous from business.

—The Amazon Rubber Co. (Jamestown, N. Y.), August 9, 1904, under New York laws, to manufacture mechanical rubber goods; capital, \$100,000. Directors: James B. Ross, Charles H. Walters, Ralph C. Sheldon, George W. Quinlan, and Brewer D. Phillips. Mr. Walters was recently connected with the Victor Rubber Co. (Springfield, Ohio) and Mr. Quinlan was lately of the Vim Cycle and Hardware Co. (Buffalo, N. Y.)

—Pneumatic Manufacturing Co. (New York), August 15, 1904, under New York laws; capital, \$100,000. Incorporators: Charles T. Russell, Henry Young, Robert A. Weber, Alcuin N. Sanders, Jerome H. Koehler, Oswald L. Simpson, and Frederick S. Jackson, all of New York city. This company is formed to succeed the Pneumatic Mattress and Cushion Co., incorporated under New York laws on July 30, 1901, to exploit mattresses and cushions under the patents of Albert A. Young, and formerly manufactured at Reading, Massachusetts. On July 14, 1904, Henry Sheldon was appointed receiver in bankruptcy for the last named company, their office being then at No. 2 South street, New York. The property of the company has been purchased from the receiver in bankruptcy by parties who will continue the business.

—The Newark Pneumatic Puncture Proof Tire Co., August 12, 1904, under New Jersey laws, to make vehicle tires; capital, \$25,000. Incorporators: Henry Willoughby, Jr., John Millar, and Edward K. Patterson. Registered office: Kearney, New

Jersey. The company will exploit a tire under United States patent No. 761,847, granted to Millar.

=Fibre Cushion Horseshoe Co. (No. 88 New Chambers street, New York), June 26, 1904, under New York laws; capital, \$300,000, in \$10 shares. Incorporators and directors for one year: Lionel D. Saxton (president), F. B. Langan, and John T. Langan. Formed to continue the business hitherto carried on under the same name, of manufacturing Saxton's fiber cushion horseshoe, which embodies a pad composed of numerous plies of cotton duck, held together with rubber friction, strongly compressed, vulcanized, and so adjusted to the metal shoe that the plies of duck stand on edge when touching the street surface.

=Manabo Manufacturing Co. (New York), July 18, 1904, under New York laws; capital, \$300,000. Directors: Louis A. Levy, No. 96 Water street, and Albert Veith, No. 622 Broadway, New York; Henry B. Corey, No. 1051 Prospect place, Brooklyn. To manufacture a golf ball patented by Joseph A. Manahan, of New York—No. 765,145, July 12, 1904. The patent claim is for "A ball comprising a core having a plurality of channels communicating at their inner ends with each other, an elastic covering for the core, and plungers operating in said channels and adapted to engage such elastic covering." The spherical core is wound with rubber thread and the cover is of Balata.

AN APPEAL IN RE FABER VS. FABER.

[See THE INDIA RUBBER WORLD, August 1, 1904—page 394.]

THE firm of Eberhard Faber has filed an appeal to the United States circuit court of appeals, from the decree of Judge Ray, entered July 19, 1904, in the United States circuit court for the southern district of New York, in the suit of A. W. Faber to have the party first named enjoined from the use of certain designations in advertising lead pencils, erasive rubber, and rubber bands. The appellant gives a bond for \$25,000, in addition to a bond for costs, and the injunction issued by virtue of the above decree is suspended during the pendency of the appeal. This does not, however, affect the operation of the terms of the decree requiring Eberhard Faber to make an accounting of the goods in his possession marked in the manner complained of.

OUTING OF THE REVERE RUBBER CO.'S EMPLOYÉS.

THE fifteenth annual picnic of the employés of the Revere Rubber Co. was held on Saturday, July 30, at Centennial Grove, Essex, Massachusetts. The employés and their families and guests, making a party of nearly a thousand, left Chelsea in a special train of 15 cars at 8.15 A. M., and reached the grove an hour later. The weather was delightful, and the program arranged was carried out with entire success. The principal feature was a baseball game, for a prize of \$50, between two picked teams from the factory. After a hotly contested match of two hours the McLaughlin team defeated the Casey team by a score of 14 to 8. Other events were:

One hundred yard dash, with three prizes.—Winners: Joseph Casey, first; J. Thornton, second; D. Conners, third.

One quarter mile run.—J. M. Patterson, first; J. Casey, second; J. Thornton, third.

One hundred yards married men's race.—D. Conners, first; J. C. Crowley, second; D. Carter, third.

Three legged race.—J. Mahoney and E. Cronin, first; J. Casey and P. Thorpe, second.

There was also a boys' race, girls' race, and potato race. But what caused more amusement than all the others was an event not on the program—a fat man's race, contested by a member of the house of representatives (weight 400 pounds), a foreman at the Revere factory (350 pounds), and an engineer at the fac-

tory (250 pounds). The lawmaker won the race, but the others consoled themselves with the fact that he had the advantage in point of years. Later there was rowing on the beautiful lake, and the dancing pavilion was freely patronized. At 6 o'clock the party marched from the grounds to the strains of "Home, Sweet Home" played by the band, and within an hour had arrived safely at Chelsea. Mr. J. S. Patterson, assistant superintendent at the factory, saw the party start in the morning, and Mr. F. W. Veazie, superintendent, spent the afternoon at the picnic grounds. The company defrayed all the expenses of the outing. The committee in charge consisted of A. N. Smith (chairman), John Egan (secretary), P. J. Malley, J. F. McLaughlin, James Casey, J. Baldwin, T. McLaughlin.

FISK RUBBER CO.—REORGANIZATION.

PROPOSALS have been made to the creditors of this company, by the receiver, looking to a reorganization on the basis of shares of a new company, to be incorporated to continue the business, being accepted in payment of their claims. The company was incorporated in the latter part of 1898 to acquire the tire plant of the Spalding & Pepper Co. (Chicopee Falls, Mass.), with \$33,000 capital. A good business was done from the beginning, but after the death of Mr. Noyes W. Fisk, president of the company, in 1901, the assistance which he had rendered in obtaining credits was lacking, with the result that this statement was issued on October 15, 1903:

The Fisk Rubber Co. has made an assignment to A. N. Mayo, of Springfield, for the purpose of reorganization and increase of capital stock. The assets are in excess of the liabilities, and it is expected that all indebtedness will be paid in full.

A statement made in connection with the assignment showed assets of \$232,587.09 and liabilities of \$237,480.96. The business of the company has since been continued uninterruptedly, and it is stated that during the first six months following the appointment of the receiver the profits earned aggregated \$62,750. It is proposed, in case the reorganization plan is assented to, to put it into operation not later than November 1 of the present year. The proposals include stipulations regarding the retirement of the stock to be issued to the creditors, which is to be in 6 per cent. cumulative shares.

THE GOODYEAR TIRE AND RUBBER CO. (AKRON).

THIS company filed in the office of the secretary of state of Ohio on August 1 a certificate reducing its capital stock—all common—from \$1,000,000 to \$500,000, and later on the same date filed a certificate increasing its capital stock from \$500,000 to \$1,000,000—one half preferred. This transaction is explained by the provisions of the Ohio statute under which common stock can be changed to preferred stock only by such procedure. The whole relates to the plan of reorganization of the company submitted lately to its creditors [See THE INDIA RUBBER WORLD, May 1, 1904—page 288], who were invited to surrender their claim for a prospective issue of bonds and a new issue of preferred shares, the company to have the right to redeem these securities at any time. The company was originally capitalized at \$1,000,000, but of this only one half was issued, and the remaining shares were cancelled by the reincorporation. Of the new capital \$500,000 is to be in 6 per cent. cumulative preferred shares, "such stock to have a preference in liquidation as well as in dividends." The plan involves also \$300,000 of 10 year 6 per cent. bonds, secured by mortgage on the company's plant.

END OF THE SOLID TIRE POOL.

THE pool which has existed during the past twelve months in solid and cushion rubber tires expired on September 1, as the result of a decision reached at a meeting of manufacturers held

in New York early in the past month. The arrangement which has thus terminated had reference to the maintenance of prices, and was guaranteed by the parties to it giving bonds, while the secretary of the pool had authority to examine the books of the various factories. As an aid to carrying out this agreement, there was an allotment of production among the factories; or, rather, those firms turning out more than their allotment contributed to a fund which was divided among firms not receiving their share of orders.

It is understood that the manufacturers' agreement in respect to "Clincher" pneumatic, which has existed for a year past, remains in force.

OUTING OF PASSAIC FACTORY EMPLOYEES.

THE outing committee of the Passaic factory of the New York Belting and Packing Co., Limited, have arranged for the holding of the seventh annual clambake, under the auspices of the foreman and clerks and executive staff of the factory, at Donnelly's Grove, College Point, Long Island, on September 3. A chowder breakfast is to be served at 10 A. M. and there will be games until 2 P. M., at which hour a Rhode Island bake will be served. This outing is unique in the Eastern rubber trade, and serves admirably to illustrate the loyalty and community of interest existing between the employes and officials of the company. The complimentary invitations issued this year are of rubber, molded in the shape of a clamshell with the invitation expressed in raised letters.

CHEMICALS FOR THE RUBBER TRADE.

THE Acker Process Co. (Niagara Falls, N. Y.), chemical manufacturers on a large scale, have entered the field of supplying the rubber trade with their products in chloride of sulphur and carbon tetrachloride, which they can furnish promptly in good size quantities; also caustic soda, bleaching powder, etc. It is understood that they have an entirely new process for the manufacture of sulphur chloride. Their advertisement appears on another page.

TRADE NEWS NOTES.

THE factories of the United States Rubber Co. at Naugatuck, Connecticut, were to resume work on Monday, August 29, after a shutdown of three weeks. The intention at first was to close for only two weeks, but the repairs undertaken during the vacation required more time than was expected. The Naugatuck rubber factories have not been closed before in summer for several years, and many of the employes have had an unusual experience in going away from home for a vacation during the heated term.

=The factory of the Joseph Banigan Rubber Co. (Olneyville, Rhode Island), resumed work on August 1, after a shutdown of four weeks, resulting from the blowing out of a cylinder head, which completely wrecked the engine. The company are reported to have in hand an important order for government work.

=The factories of the Woonsocket Rubber Co. were shut down for ten days recently, starting up during the third week in August.

=The shoe department at the factory of the National India Rubber Co. (Bristol, Rhode Island) was closed on August 13 for two weeks. The other departments continued in operation.

=The International Automobile and Vehicle Tire Co. (Milltown, New Jersey) have acquired all the rights to the Stodder puncture proof tire, which they have been manufacturing for some time past.

=The Beacon Falls Rubber Shoe Co.'s Boston branch is now fully installed in the new premises, No. 228 Congress street.

=The store of the Goodyear Rubber Co. was among the business houses seriously damaged by an unprecedented storm which swept over St. Paul, Minnesota, on August 21, causing the known loss of twelve lives in the state and a loss of property estimated at millions of dollars.

=The rubber reclaiming plant of the New Jersey Rubber Co. (Lambertville, New Jersey) was closed for repairs for a week during the middle of August. Work was resumed as promptly as possible, as the company have a number of orders in hand.

=The board of fire commissioners of St. Paul, Minnesota, on August 17, opened bids for 1000 feet of fire hose, awarding the contract to the St. Paul Rubber Co., jobbers, of that city, at \$1.10 per foot.

=The premises known as the "Goodyear Rubber Store," at No. 866 Chapel street, New Haven, Connecticut, long occupied as a retail rubber store by Frank C. Tuttle, whose bankruptcy was reported in THE INDIA RUBBER WORLD for July 1, are now occupied by The Pardee-Ellenberger Co., with a retail stock of rubber goods, sporting goods, phonographs and records. The firm will continue their wholesale business at their old location, No. 155 Orange street.

=At a meeting on August 5, of creditors of Frank C. Tuttle, a rubber goods dealer in New Haven, Connecticut, who failed in June, a first dividend of 10 per cent. of the claims was declared.

=A recent fire in the factory of the Empire Rubber Manufacturing Co. (Trenton, New Jersey), caused by frictional electricity from a belt, and quickly extinguished by sprinklers, causing a total loss of \$918, led to the publication by the insurance press of the amount of insurance carried by the company—\$267,750.

=Schedules of bankruptcy of Benedict Reis, who did business as the Neptune Rubber Co., manufacturing mackintoshes and rainproof coats at No. 23 Lispenard street, New York, show liabilities of \$41,327 and nominal assets of \$4100, of which \$3900 is represented by 39 shares of the Mercury Rubber Co., which was incorporated in 1903 to operate a factory at Elizabeth, New Jersey, but never made a start. Benedict Reis, after his failure, left the country, but is now in New York selling silks for a foreign house.

=Samuel W. Luce has resigned as auditor of The Republic Rubber Co. (Youngstown, Ohio) and been succeeded by C. F. Garrison.

=C. J. Bailey & Co. (Boston) on August 10 received a telegram from Mr. H. Fred Lesh, who recently went from Boston to St. Louis in an automobile contest, reading as follows: "From Boston here with five passengers, on the Bailey 'Won't Slip' tires, without a single tire trouble. No other tires made such a record on the run."—A. E. Morrison, on "Peerless" automobile equipped with "Won't Slip" tires, won the automobile race at Newport, Rhode Island, on July 30, over all foreign and American cars in this class.

=The W. C. Coleman Co. (Setauket, New York) desire us to state that it is owned by the same parties who owned it when it was located in New York city. It has in no way connected itself with any other person or firm, either in Setauket or elsewhere, since its establishment.

=Corydon M. Amerman, formerly with William Wright & Co., importers of crude rubber, has opened an office as broker in rubber at No. 108 Water street, New York.

=Leonard Klein, aged 45, an employe of the Alkali Rubber Co. (Akron, Ohio), had both hands so badly crushed in a mill at the company's factory that amputation was necessary. He afterwards died at the hospital, as is supposed from worry over his unfortunate condition. He left a widow and thirteen children.

=F. Haskell Smith, formerly with the Milwaukee Rubber Works Co., and recently with the Boston Woven Hose and Rubber Co., has accepted a position with the Fisk Rubber Co. (Chicopee Falls, Massachusetts).

PERSONAL MENTION.

MR. HENRY C. PEARSON, Editor of THE INDIA RUBBER WORLD, has been appointed a Juror of Awards for the St. Louis World's Fair, in July 11, which will review exhibits of India-rubber and Gutta-percha and manufactures thereof. He will be detained at St. Louis by this duty until about September 15.

=Mr. Amadée Spadone, president of the Gutta Percha and Rubber Manufacturing Co. (New York), has spent several weeks this summer in travel in Italy, Germany, and France, including a visit to his native village near Arras, in the French department of Pas de-Calais. He reports an enjoyable vacation, repeating now after a considerable interval what used to be with him an annual tour.

=Colonel Samuel P. Colt, president of the United States Rubber Co., who has been in Europe for several weeks, is expected to return early in the present month.

=Mr. Charles H. Dale, president of the Rubber Goods Manufacturing Co., sailed for Europe on August 19, for a vacation of a few weeks.

=Signor Alberto Pirelli, a member of the important rubber manufacturing firm of Pirelli & Co. (Milan, Italy), who is in the United States to attend the International Electrical Congress, in connection with the St. Louis World's Fair, favored THE INDIA RUBBER WORLD offices with a call during the month.

=Mr. Fred C. Hood, treasurer and general manager of the Hood Rubber Co. (Boston) is one of the rubber men from the United States who have been spending a vacation in Europe this summer, and whose return is expected shortly.

=Mr. Isaac B. Markey, secretary of the Eureka Fire Hose Co. (New York), has recently been ill—so much so that he probably will not be able to attend the convention of the International Association of Fire Engineers at Chattanooga, Tennessee, on September 13 16, as he intended—but at last accounts his condition was improving.

=Colonel Harry E. Converse, president of the Boston Rubber Shoe Co., and his family are visiting the Louisiana Purchase Exposition, at St. Louis.

OBITUARY NOTES.

EDMUND FIELD HEATH, one of the oldest manufacturers of Newark, New Jersey, died at his home in that city on August 11. He was born in London nearly 80 years ago, and settled in Newark with his parents early in life. He had carried on for over 50 years the manufacture of rubber and enameled carriage cloth, in which he had built up a large business, conducted laterly under the style E. F. Heath & Son.

=J. A. Vining, of Akron, Ohio, died on August 18, at his mother's home at Monument Beach, Massachusetts. He was a director in the Whitman & Barnes Manufacturing Co., and had charge of their manufacturing in Akron and Chicago. He had been with the firm for 25 years, was 47 years of age and unmarried, and a member of the Akron lodge of Elks.

=Hugh Murphy died at his home in Franklin, Massachusetts, on August 20, in his sixty-fourth year. A native of Ireland, he came to America at an early age and in time entered the rubber industry, being for a time with the late Mr. Bani-gan, in the Woonsocket rubber factory. Later, with Patrick Wren and Horace Jenckes, he built the rubber factory at Franklin which came under control of George H. Hood—the Boston Rubber Co.—and worked there until the factory, then owned by the United States Rubber Co., was closed, in 1896. One of Mr. Murphy's sons is now employed by the Hood Rubber Co., at Watertown.

REVIEW OF THE CRUDE RUBBER MARKET.

IN addition to a greater scarcity of supplies of fine rubber than has yet been reported at any time, and exceptionally high prices for all grades, there is to be reported thus far lighter arrivals at Amazon ports than for several seasons past. The topic of paramount interest with rubber manufacturers everywhere is the continued high cost of their raw materials, and the lack of indication of any early relief. Below are given the quotations ruling at this writing. There have been transactions in America at even higher rates. One firm reports: "The highest we have heard for regular market in Upriver rubber is \$1.20, at which regular business has been done. What old rubber or special buyers have paid we do not know, but we have sold a few tons at \$1.25—not old rubber." Another house reports the sale during the month of old Bolivian fine at \$1.25. London advices of August 19 recorded sales of fine hard and Bolivian fine at 5s. 2½d. [= \$1.27], but undoubtedly the highest price to date is that obtained at the London auction, on the date mentioned—5s. 7¼d. [= \$1.37] for cultivated rubber from Ceylon, Pará variety.

The reports may readily be credited that manufacturers are not buying beyond their more pressing immediate requirements, in the hope of an early decline in prices. In this connection this suggestion comes to hand: "It is just this policy that gives speculators in rubber their opportunity. In fact, there are houses to-day interested in discouraging the buying of rubber, by which means they hope to see an accumulation of rubber—something which now nowhere exists—when they will

buy freely on their own account. Later in the season, when the manufacturers will be obliged to buy heavily, they will have to deal with the houses which have thus acquired supplies of rubber. No speculatively inclined house," this suggestion goes on, "will buy rubber at present prices in the hope of liberal future profits, and they are concerned in bringing about a decline." But while American manufacturers may not have been buyers on a large scale, still a great deal of buying has been done. A single firm of brokers report having made 168 contracts during August.

It is understood that the rubber sold at Antwerp during the month was bought largely for American account, but as it was purchased for filling orders, the arrivals now almost due at New York will not contribute materially to stocks here. It has been claimed on this side of the Atlantic that for some time past Antwerp offerings have been overvalued, but in the same quarters it is admitted that the August estimations more accurately represented values. The figures on another page indicate the advance recorded over former prices.

Arrivals at Pará during July last (including Caucho) were 1250 tons, against 1270 tons in July, 1903. Arrivals in August, up to the 29th, amounted to 1040 tons, against 1230 tons for the whole month last year. In other words: July and August last year, 2510 tons; to August 29 this year, 2290 tons.

In regard to the financial situation, Albert B. Beers (broker in India-rubber, No. 68 William street, New York), advises us "During August the money market has continued in the

same easy condition of the past three months, call loans ruling at about 1 per cent., and rubber paper being taken at $4\frac{1}{2}$ @ $5\frac{1}{2}$ according to grade."

Following is a statement of prices of Pará grades, one year ago, one month ago, and on August 30—the current date.

PARÁ.	Sept. 1, '03.	Aug. 1, '04.	Aug. 30.
Islands, fine, new.....	96@ 97	114@115	116@117
Islands, fine, old.....	100@101	none here	none here
Upriver, fine, new.....	99@100	118@119	120@121
Upriver, fine, old.....	101@102	119@120	122@123
Islands, coarse, new.....	59@ 60	64@ 65	66@ 67
Islands, coarse, old.....	@	none here	none here
Upriver, coarse, new.....	78@ 79	91@ 92	91@ 92
Upriver, coarse, old.....	@	none here	none here
Caucho (Peruvian) sheet.....	61@ 62	68@ 69	68@ 69
Caucho (Peruvian) ball.....	74@ 75	77@ 78	77@ 78

We have no change to report, since the first of the month, in other sorts at New York:

AFRICAN.	CENTRALS.
Sierra Leone, 1st quality 94 @95	Esmeralda, sausage... 74 @75
Massai, red..... 94 @95	Guayaquil, strip..... 64 @65
Benguella..... 74 @75	Nicaragua, scrap... 74 @75
Cameroon ball..... 64 @65	Panama, slab..... 57 @58
Accra flake..... 33 @34	Mexican, scrap..... 72 @73
Lopori ball, prime... 93 @94	Mexican, slab..... 57 @58
Lopori strip, prime... 89 @90	Mangabeira, sheet... 49 @57
Ikelemba..... 94 @95	EAST INDIAN.
Madagascar, pinky... 82 @83	Assam..... 86 @87
	Borneo..... @

Late Pará cables quote:

	Per Kilo.	Per Kilo.
Islands, fine.....	7\$100	Upriver, fine... 8\$200
Islands, coarse.....	3\$500	Upriver, coarse... 6\$000
Exchange, 12 $\frac{3}{8}$ d.		

Last Manáos advices:

Upriver, fine.....	7\$350	Upriver, coarse.....	5\$250
Exchange, 12 $\frac{1}{8}$ d.			

NEW YORK RUBBER PRICES FOR JULY (NEW RUBBER).

	1904.	1903.	1902.
Upriver, fine.....	1.12@1.19	94@96	70 @72
Upriver, coarse.....	87@ 91	74@76	55 @56
Islands, fine.....	1.09@1.15	89@92	67 @69
Islands, coarse.....	63@ 66	56@58	44 @46
Cametá, coarse.....	64@ 66	58@60	46 @48

Statistics of Para Rubber (Excluding Caucho).

NEW YORK.					
	Fine and Medium.	Coarse.	Total 1904.	Total 1903.	Total 1902.
Stocks, June 30.....	112	25 =	137	367	413
Arrivals, July.....	218	260 =	478	942	518
Aggregating.....	330	285 =	615	1309	931
Deliveries, July.....	273	276 =	549	1085	569
Stocks, July 30.....	57	9 =	66	224	362

PARÁ.					
	1904.	1903.	1902.	1904.	1903.
Stocks, June 30.....	175	115	65	585	1320
Arrivals, July.....	1010	1050	1060	595	330
Aggregating.....	1185	1165	1125	1180	1650
Deliveries, July.....	870	1030	1085	745	675
Stocks, July 30.....	315	135	40	435	975

ENGLAND.					
	1904.	1903.	1902.	1904.	1903.
Stocks, June 30.....	175	115	65	585	1320
Arrivals, July.....	1010	1050	1060	595	330
Aggregating.....	1185	1165	1125	1180	1650
Deliveries, July.....	870	1030	1085	745	675
Stocks, July 30.....	315	135	40	435	975

	1904.	1903.	1902.
World's visible supply, July 30.....	1281	2088	2958
Pará receipts, July 1 to July 30.....	1010	1050	1060
Para receipts of Caucho, same dates.....	230	230	250
Afloat from Pará to United States, July 30..	166	394	440
Afloat from Pará to Europe, July 30.....	241	360	600

The World's Rubber Stocks.

THE important house of Hecht, Levis & Kahn (Liverpool, London, Paris, and Hamburg) have issued their annual India-rubber statistical chart for the year ending June 30, 1904, from which we extract their estimate of the visible supplies of rub-

ber in the principal markets on that date, placing side by side with them their estimates for former years, as previously published. It will be seen from the totals given that a steady decline has prevailed, the total for June 30 last being 44.2 per cent. less than in 1900. It must be understood that wholly accurate statistics in such a case are not attainable; at the same time there is a striking agreement between the statements of approximate figures prepared by different statisticians, and the firm above named bear a high reputation for the trustworthiness of their estimates. The comparison follows:

STOCKS.	June 30, 1900.	June 30, 1901.	June 30, 1902.	June 30, 1903.	June 30, 1904.
<i>Pará Grades:</i>					
Liverpool.....	2,137	1,467	2,448	1,601	905
Hayre.....	95	70	30	65	25
New York.....	601	875	392	383	102
Pará.....	195	28	60	129	174
Afloat.....	1,099	995	900	1,185	878
Total.....	4,127	3,435	3,830	3,363	2,084
<i>Medium Grades:</i>					
Liverpool.....	1,082	946	585	456	715
London.....	646	742	560	224	306
Antwerp.....	726	954	681	488	689
Lisbon.....	717	544	505	220	290
Rotterdam.....	....	....	80	56	66
New York.....	571	320	575	246	238
Total.....	3,742	3,506	2,986	1,690	2,304
TOTAL ALL KINDS.....	7,869	6,941	6,816	5,053	4,388

There are comparatively unimportant stocks in certain other European ports—for example, 260 tons (estimated) of Pará sorts. Besides, the table does not indicate the amounts afloat of other than Pará grades. But as these estimates have been prepared each year on the same basis, the table may be relied upon as indicating correctly the declining tendency in the size of stocks. "Medium grades" in the above table include Caucho, or Peruvian rubber, for New York, while European statisticians include this grade with "Pará."

United States Crude Rubber Imports.

OFFICIAL STATEMENT—BY FISCAL YEARS.

FROM—	1901-02.	1902-03.	1903-04.
United Kingdom.....	6,114,107	9,714,597	7,711,910
Germany.....	1,653,678	2,916,814	2,458,568
Other Europe.....	7,779,574	8,078,629	11,206,264
Central America.....	1,121,399	1,083,351	1,264,210
Mexico.....	263,909	251,776	366,104
West Indies.....	63,094	15,609	17,910
Brazil.....	31,532,700	31,119,486	33,109,112
Other South America.....	1,285,792	1,363,832	1,704,492
East Indies.....	558,621	454,594	1,084,689
Other countries.....	40,607	11,883	2,292
Total.....	50,413,481	55,010,571	59,015,551
Value.....	\$25,151,559	\$30,436,710	\$40,444,250
Average per pound.....	49.89 cents.	55 3 cents.	68.5 cents.
EXPORTS of Rubber.....	2,378,353	2,911,538	3,942,002
Net Imports.....	48,035,128	52,099,033	55,073,549

Rubber Scrap Prices.

NEW YORK quotations—prices paid by consumers for car-load lots—in cents per pound—show practically no change from last month:

Old Rubber Boots and Shoes—Domestic.....	5 $\frac{1}{8}$ @ 5 $\frac{1}{4}$
Do —Foreign.....	4 $\frac{3}{8}$ @ 4 $\frac{1}{2}$
Pneumatic Bicycle Tires.....	3 $\frac{1}{2}$ @ 4
Solid Rubber Wagon and Carriage Tires.....	6
White Trimmed Rubber.....	8 $\frac{1}{2}$ @ 8 $\frac{3}{4}$
Heavy Black Rubber.....	4
Air Brake Hose.....	2 $\frac{1}{4}$ @ 2 $\frac{3}{8}$
Fire and Large Hose.....	1 $\frac{3}{4}$ @ 1 $\frac{1}{2}$
Garden Hose.....	1 $\frac{3}{8}$ @ 1 $\frac{1}{2}$
Matting.....	3 $\frac{1}{4}$ @ 1

Rubber Receipts at Manaos.

DURING July—the first month of the crop year—for three years [courtesy of Messrs. Witt & Co.]:

FROM—	1904.	1903.	1902.
Rio Purús—Acre... tons	145	163	173
Rio Madeira.....	149	252	263
Rio Juruá.....	25	2	3
Rio Javary—Iquitos.....	25	14	14
Rio Solimões.....	4	10	7
Rio Negro.....	—	12	17
Total.....	348	453	477
Caucho.....	99	161	165
Total.....	447	614	642

London.

EDWARD TILL & Co. [August 2] report stocks:

	1904.	1903.	1902.
LONDON { Pará sorts..... tons	—	—	—
{ Borneo.....	54	23	130
{ Assam and Rangoon.....	20	11	11
{ Other sorts.....	331	176	398
Total.....	405	210	539
LIVERPOOL { Pará.....	434	981	1739
{ Caucho.....	323	222	220
{ Other sorts.....	602	368	555
Total, United Kingdom.....	1764	1781	3053
Total, July 1.....	1920	2285	3595
Total, June 1.....	1667	2248	3687
Total, May 1.....	1644	2539	3788
Total, April 1.....	1367	2525	3326

PRICES PAID DURING JULY.

	1904.	1903.	1902.
Pará fine, hard..	4/ 9 1/4 @ 4/ 11 3/4	3/ 11 @ 4/ 0 1/2	2/ 11 1/2 @ 2/ 11 3/4
Do soft.....	4/ 8 @ 4/ 10	3/ 10 @ 3/ 11	2/ 10 1/4 @ 2/ 11 1/2
Negroheads, scrappy.	3/ 7 1/2 @ 3/ 9 3/4	3/ 1 @ 3/ 1 3/4	2/ 3 @ 2/ 3 3/4
Do Cameté.....	2/ 7 1/2 @ 2/ 8 3/4	2/ 6 @ 2/ 6 1/4	2/
Bolivian.....	4/ 11 1/4 @ 4/ 11 3/4	4/ 1 1/2 @ 3/	@ 3/ 0 1/4
Caucho ball.....	3/ 3 @ 3/ 5	3/ @ 3/ 1	2/ 3 1/2 @ 2/ 4
Do slab.....	2/ 10	2/ 5 1/2 @ 2/ 6	1/ 11 @ 1/ 11 1/2

Liverpool.

WILLIAM WRIGHT & Co. report [August 2]:

Fine Pará.—With small stocks and small supplies prices have again advanced, with an active spot demand, and the market closes fully 2d. per pound dearer than last month. The advance has been entirely due to scarcity, and there does not seem much chance at present for a decline, but a good deal, of course, will depend on what action America takes. Upriver fine closes firm at 4s. 11 3/4d., and Islands at 4s. 10 1/2d. Receipts for the month are 1265 tons, including 240 tons Peruvian, against 1500 tons last month and 1270 tons last year. Deliveries for the month are 963 tons, against 830 tons last month and 855 tons last year.

EDMUND SCHLÜTER & Co. report [August 17]:

Parás.—Our market has been limited, owing to short supplies, but generally speaking, the tone may be described as strong. Bolivian fine sold at 5s. 0 1/2d. @ 5s. 2d. for spot, and 5s. @ 5s. 0 1/2d. for delivery. Spot fine hard, 5s. 2d. paid, but there is practically nothing to be had in this grade. Soft has again met with demand, and sales have taken place at 4s. 11 1/2d. up to 5s. The close is very strong, with buyers at the best. There has been some speculative business in the more distant positions, at 4s. 10 1/2d. September-October; 4s. 10d., October-November; 4s. 9d., November-December. The two latter deliveries declined to 4s. 9 1/2d. @ 4s. 8 1/2d., with fairly free sellers, who have, however, now withdrawn.

Antwerp.

TO THE EDITOR OF THE INDIA RUBBER WORLD: Out of a total of 507 tons of rubber offered at the inscription on August 12th, 468 tons found buyers, of which 397 tons were Congo

sorts and 72 tons sundries. Prices showed an advance of 20 @ 25 centimes per kilogram, or 2 1/2 per cent. advance on brokers' valuations, based on the results of the sale of July 8. Some of the more important lots which changed hands were:

	Valuations.	Sold at.
Lopori I.....	10.50	10.87 1/2
Lopori II.....	6.50	6.25 @ 6.60
Uelé (Upper Congo) strips.....	8.50	9.80
Uelé (Upper Congo) strips.....	8.40	8.82 1/2
Upper Congo balls.....	10.10	10.15
Aruwimi.....	8.90	8.62 1/2
Kasai (Loanda II grade).....	9.80	10.10
Congo Djuma.....	7.	7.40

Total sales since August 1 amount to 493 tons, and our stocks to-day are 373 tons. The next monthly sale will occur on September 23, when 530 tons will be offered.

C. SCHMID & CO., SUCCESEURS.

Antwerp, Belgium, August 17, 1904.

ANTWERP RUBBER STATISTICS FOR JULY.

DETAILS.	1904.	1903.	1902.	1901.	1900.
Stocks, June 30..... kilos	689,515	487,999	681,670	954,579	726,376
Arrivals in July.....	639,157	305,406	592,836	470,662	657,767
Congo sorts.....	530,159	324,060	545,222	458,423	632,149
Other sorts.....	108,998	41,346	47,614	12,239	25,618
Aggregating.....	1,328,672	853,405	1,274,506	1,425,241	1,384,143
Sales in July.....	455,926	475,878	584,734	384,800	250,441
Stocks, July 30.....	872,746	377,527	689,772	1,040,441	1,133,702
Arrivals since Jan. 1.....	3,464,917	2,979,332	3,237,644	3,552,054	3,669,230
Congo sorts.....	2,847,591	2,649,192	3,001,476	3,243,557	3,121,175
Other sorts.....	617,326	330,140	236,168	308,497	548,055
Sales since Jan. 1.....	3,203,071	3,259,910	2,962,581	3,125,652	2,827,519

RUBBER ARRIVALS AT ANTWERP.

JULY 25.—By the *Anversville*, from the Congo:

Bunge & Co..... (Société Générale Africaine) kilos	133,000
Do..... (Société Isangi)	7,100
Do..... (Chemins de fer des Grand Lacs)	8,000
Do..... (Société "La Kotto")	1,100
Do..... (Sultanats du Haut Obangi)	5,700
Do..... (Société Anversoise)	35,000
A B I R.....	56,000
L. & W. Van de Velde..... (Cie. du Kasai)	55,000
Comptoir Commercial Anversois..... (Cie. du Kouango Français)	6,500
W. Mallinckrodt & Co..... (La Lobay)	8,200
Charles Dethier..... (La Haut Sangha)	22,000
Société Coloniale Anversoise..... (Belge du Haut Congo)	11,000
Comptoir des Produits Coloniaux..... (Cie. de la N'Goko)	4,200
M. S. Cols.....	700
Do..... (Société L'Ikelemba)	800
Cie Commerciale des Colonies.....	700
Société Equatoriale Congolaise..... (Société L'Ikelemba)	1,600 356,600

AUG. 17.—By the *Leopoldville*, from the Congo:

Bunge & Co..... (Société Générale Africaine) kilos	112,000
Do..... (Sultanats du Haut Obangi)	9,500
Do..... (Société "La Kotto")	1,500
Do..... (Cie. du Kasai)	77,000
Cie. Commerciale des Colonies.....	6,000
Société Générale de Commerce..... (Alimaïenne)	3,700
M. S. Cols..... (Alima)	2,700
Do..... (Société Baniembe)	700
G. & C. Kreglinger..... (La Lobay)	2,000
Comptoir Commercial Congolais.....	44,000 259,100

W. MALLINCKRODT & Co. on August 1 transferred their India-rubber and Wool departments to the Company for General Trade, Limited, and will devote themselves in future more particularly to banking and stock transactions. They will be largely interested, however, in the new company, which is capitalized at 2,000,000 francs. Mr. W. von Mallinckrodt is chairman of the new company; Mr. C. G. Grisar, vice chairman; Mr. A. Franck and Count E. Le Grelle directors; Mr. E. Schwerdt director and manager; and Messrs. W. Leuchter and G. Schindhelm managers.

Gutta-Percha.

WEISE & Co. (Rotterdam) report exports from Singapore for the first six months of five years:

	1900.	1901.	1902.	1903.	1904.
Tons	3219	3126	2490	1704	1110

IMPORTS FROM PARA AT NEW YORK.

[The Figures Indicate Weights in Pounds.]

August 3.—By the steamer *Basil*, from Manáos and Pará:

IMPORTERS.	Fine.	Medium.	Coarse.	Caucho.	Total.
New York Commercial Co.	88,700	13,700	74,000	.....	176,400
A. T. Morse & Co.	9,800	1,400	66,100	33,800	111,100
Poel & Arnold	25,700	2,500	33,100	.....	61,300
Hagemeyer & Brunn	5,400	.....	2,300	.....	7,700
Lionel Hageners & Co.	5,800	.....	1,300	.....	7,100
Total	135,400	17,600	176,800	33,800	363,600

August 15.—By the steamer *Maranhense*, from Manáos and Pará:

Poel & Arnold	81,000	12,800	94,800	4,800	193,400
New York Commercial Co.	100,400	15,400	60,300	700	176,800
A. T. Morse & Co.	58,300	6,900	86,500	.....	151,700
G. Amsinck & Co.	6,700	1,000	6,300	.....	14,000
Lionel Hageners & Co.	10,300	.....	2,800	.....	13,100
Total	256,700	36,100	250,700	5,500	549,000

August 25.—By the steamer *Hilary*, from Manáos and Pará:

New York Commercial Co.	110,900	32,800	40,600	6,000	190,300
A. T. Morse & Co.	50,100	8,700	49,000	5,200	113,000
Poel & Arnold	29,300	5,000	49,300	1,800	85,400
Lionel Hageners & Co.	8,200	.....	3,900	.....	12,100
Hagemeyer & Brunn	6,100	.....	3,900	.....	10,000
Robinson & Tallman	6,700	1,400	500	.....	8,600
Edmund Reeks & Co.	.....	.....	5,600	.....	5,600
Total	211,300	47,900	152,800	13,000	425,000

[NOTE.—The steamer *Fernard*, from Pará, is due at New York on September 6, with 90 tons Rubber.]

PARA RUBBER VIA EUROPE.

	POUNDS.
AUG. 1.—By the <i>Celtic</i>=Liverpool:	
A. T. Morse & Co. (Fine)	9,000
AUG. 1.—By the <i>Kroonland</i>=Antwerp:	
New York Commercial Co. (Fine)	4,500
AUG. 3.—By the <i>Seguranea</i>=Mollendo:	
Chicago Bolivian Rubber Co. (Fine)	16,000
AUG. 4.—By the <i>Grenada</i>=Ciudad Bolívar:	
Middleton & Co. (Fine)	3,500
Middleton & Co. (Coarse)	4,600 8,600
AUG. 5.—By the <i>Baltic</i>=Liverpool:	
Poel & Arnold (Fine)	21,000
AUG. 5.—By the <i>Carpathia</i>=Liverpool:	
New York Commercial Co. (Fine)	62,000
AUG. 6.—By the <i>Cumpania</i>=Liverpool:	
New York Commercial Co. (Fine)	32,000
Poel & Arnold (Fine)	11,000 43,000
AUG. 12.—By the <i>Prins Willem Third</i>=Ciudad Bolívar:	
Thebaud Brothers (Fine)	11,000
Thebaud Brothers (Coarse)	2,500 13,500
AUG. 15.—By the <i>Cedric</i>=Liverpool:	
Poel & Arnold (Fine)	41,000
Poel & Arnold (Coarse)	25,000
A. T. Morse & Co. (Fine)	20,000 86,000
AUG. 15.—By the <i>Eturia</i>=Liverpool:	
New York Commercial Co. (Fine)	24,000
Poel & Arnold (Fine)	22,500
A. T. Morse & Co. (Fine)	22,500 69,000
AUG. 16.—By the <i>Finland</i>=Antwerp:	
New York Commercial Co. (Fine)	51,000
AUG. 18.—By the <i>Aurania</i>=Liverpool:	
New York Commercial Co. (Fine)	8,000
AUG. 22.—By the <i>New York</i>=London:	
Poel & Arnold (Coarse)	22,500
AUG. 24.—By the <i>Advance</i>=Mollendo:	
Chicago Bolivian Rubber Co. (Fine)	12,000

OTHER ARRIVALS AT NEW YORK**CENTRALS.**

	POUNDS.
JULY 25.—By the <i>Comus</i>=New Orleans:	
Manhattan Rubber Mfg. Co.	2,000
A. S. Lascellas & Co.	1,000 3,000
JULY 27.—By the <i>Sarnia</i>=Savanilla, etc.:	
De Sola & Pardo	1,000
Suzarte & Whitney	300
G. Amsinck & Co.	300
Cadenas & Co.	500
Jimenez & Escobar	500
Czarnikow, MacDougal Co.	100
D. A. De Lima & Co.	200
Kunhardt & Co.	200 3,100
JULY 28.—By the <i>Eastern Prince</i>=Bahia:	
J. H. Rossbach & Bros.	106,000
Hirsch & Kaiser	2,500 108,500
JULY 29.—By the <i>El Cid</i>=New Orleans:	
A. N. Rotholz	2,000
Manhattan Rubber Mfg. Co.	1,500
A. T. Morse & Co.	1,000 4,500

CENTRALS—Continued.

AUG. 1.—By the <i>Terence</i>=Bahia:	
J. H. Rossbach & Bros.	76,000
Hirsch & Kaiser	24,000 100,000
AUG. 1.—By the <i>Proteus</i>=New Orleans:	
Manhattan Rubber Mfg. Co.	3,700
AUG. 3.—By the <i>Seguranea</i>=Colon:	
Hirzel, Feltman & Co.	14,000
Roldan & Van Sickle	4,100
A. Santos & Co.	3,500
Livingstone & Co.	4,500
A. Rosenthal & Sons	3,100
A. M. Capen Sons	3,100
G. Amsinck & Co.	4,300
Isaac Brandon & Bros.	2,400
Harburger & Stack	2,400
P. Za, Nephews & Co.	1,100
Dumarest Bros. & Co.	2,000
W. K. Grace & Co.	1,000
Meyer Hecht	800
Silva, Bussenius & Co.	800
Smithers, Nordenholt & Co.	400
Kunhardt & Co.	300 51,000
AUG. 6.—By the <i>Havana</i>=Frontera:	
Harburger & Stack	2,000
E. Stelger & Co.	1,500
H. Marquardt & Co.	1,000 4,500
AUG. 8.—By the <i>Comus</i>=New Orleans:	
A. T. Morse & Co.	4,000
AUG. 10.—By the <i>Carib II</i>=Truxillo, etc.:	
Eggers & Heinlein	10,000
A. S. Lascellas & Co.	1,200
H. W. Peabody & Co.	800 12,000
AUG. 9.—By the <i>Siberia</i>=Port Limon:	
Isaac Brandon & Bros.	2,000
D. A. De Lima & Co.	1,000
G. Amsinck & Co.	1,000
Lawrence Johnson & Co.	700
A. D. Straus & Co.	400
Kunhardt & Co.	300
Bartling & DeLeon	200 5,600
AUG. 10.—By the <i>Alianza</i>=Colon:	
Hirzel, Feltman & Co.	3,000
Harburger & Stack	1,900
G. Amsinck & Co.	1,800
Meyer Hecht	1,500
Jimenez & Escobar	1,100
E. B. Strout	700
Livingstone & Co.	300
Eggers & Heinlein	500 10,800
AUG. 11.—By the <i>Canning</i>=Bahia:	
J. H. Rossbach & Bros.	80,000
Hirsch & Kaiser	22,500 102,500
AUG. 12.—By the <i>Finance</i>=Colon:	
G. Amsinck & Co.	3,600
Lawrence Johnson & Co.	1,000
Isaac Brandon & Bros.	600
A. Rosenthal & Sons	500
Andreas & Co.	400
De Sola & Pardo	400 6,500
AUG. 13.—By the <i>Monterey</i>=Mexico:	
H. Marquardt & Co.	3,500
Graham, Hinkley & Co.	2,000
Harburger & Stack	2,000
Fred. Frost & Co.	1,500
Thebaud Brothers	700
L. N. Chemedlin & Co.	700
E. N. Tibbals & Co.	700
American Trading Co.	700

CENTRALS—Continued.

Isaac Kuble & Co.	500
For Hamburg, etc.	14,000 26,300
AUG. 15.—By the <i>Proteus</i>=New Orleans:	
Manhattan Rubber Mfg. Co.	1,500
A. T. Morse & Co.	1,000
Eggers & Heinlein	1,500 4,000
AUG. 17.—By the <i>Yucatan</i>=Colon:	
Hirzel, Feltman & Co.	29,400
A. Santos & Co.	8,500
Lawrence Johnson & Co.	7,000
G. Amsinck & Co.	5,600
American Trading Co.	3,900
Harburger & Stack	3,100
Mecke & Co.	3,000
Dumarest Bros. & Co.	2,500
Isaac Brandon & Bros.	1,300
J. H. Recknagel & Son	600
Roldan & Van Sickle	500
Kunhardt & Co.	500
Schultz & Ruckgaber	300
Graham, Hinkley & Co.	300 66,500
AUG. 19.—By the <i>El Valle</i>=New Orleans:	
A. N. Rotholz	9,000
AUG. 20.—By the <i>Esperanza</i>=Mexico:	
H. Marquardt & Co.	2,500
E. Stelger	1,000
L. N. Chemedlin & Co.	200
E. N. Tibbals & Co.	100
Graham, Hinkley & Co.	700 4,500
AUG. 22.—By the <i>Byron</i>=Bahia:	
J. H. Rossbach & Bros.	17,500
A. D. Hitch & Co.	3,500
Lawrence Johnson & Co.	1,600 22,500
AUG. 24.—By the <i>Advance</i>=Colon:	
A. Santos & Co.	5,700
Hirzel, Feltman & Co.	4,600
G. Amsinck & Co.	3,500
Roldan & Van Sickle	3,100
Livingstone & Co.	2,800
Lawrence Johnson & Co.	2,300
Eggers & Heinlein	1,700
A. Rosenthal & Sons	1,500
Isaac Brandon & Bros.	1,300
Dumarest Bros. & Co.	1,200
J. A. Pauli & Co.	900
A. M. Capen Sons	800 30,900
Silva, Bussenius & Co.	800
AFRICANS.	
JULY 25.—By the <i>Arabic</i>=Liverpool:	
General Rubber Co.	66,000
A. T. Morse & Co.	11,000 77,000
JULY 25.—By the <i>Rotterdam</i>=Rotterdam:	
Poel & Arnold	9,000
JULY 26.—By the <i>Vaderland</i>=Antwerp:	
Poel & Arnold	266,000
Joseph Cantor	66,000
Robinson & Tallman	26,000
A. T. Morse & Co.	22,000 380,000
JULY 28.—By the <i>Teutonic</i>=Liverpool:	
Poel & Arnold	27,000
JULY 28.—By the <i>Pennsylvania</i>=Hamburg:	
Poel & Arnold	40,000
Rubber Trading Co.	9,000
George A. Alden & Co.	5,500 54,500

AFRICANS—Continued.			EAST INDIAN.		GUTTA-PERCHA AND BALATA	
AUG. 1.—By the <i>Umbria</i> =Liverpool:			JULY 25.—By the <i>Indravelli</i> =Singapore:		JULY 25.—By the <i>La Bretagne</i> =Havre:	
Poel & Arnold.....	3,000		Pierre T. Betts	17,500	To order	7,000
A. T. Morse & Co.....	5,500		JULY 28.—By the <i>Pennsylvania</i> =Hamburg:		AUG. 4.—By the <i>Patricia</i> =Hamburg:	
George A. Alden & Co.....	11,000	19,500	George A. Alden & Co.....	4,500	To order.....	1,500
AUG. 1.—By the <i>Peninsular</i> =Lisbon:			AUG. 3.—By the <i>Schonefels</i> =Calcutta:		Kempshall Mfg. Co.....	2,500 4,000
General Rubber Co.....	100,000		George A. Alden & Co.....	20,000	AUG. 15.—By the <i>Briez Huel</i> =Singapore:	
AUG. 1.—By the <i>Kroonland</i> =Antwerp:			AUG. 4.—By the <i>St. Paul</i> =London:		D. A. Shaw & Co.....	75,000
George A. Alden & Co.....	118,000		Poel & Arnold	9,000	BALATA.	
A. T. Morse & Co.....	18,000	136,000	AUG. 5.—By the <i>Carpathia</i> =Liverpool:		JULY 27.—By the <i>Korona</i> =Demerara:	
AUG. 5.—By the <i>Baltic</i> =Liverpool:			Poel & Arnold.....	8,000	Middleton & Co.....	3,000
Poel & Arnold	12,500		AUG. 6.—By the <i>Philadelphia</i> =London:		AUG. 2.—By the <i>Minnehaha</i> =London:	
AUG. 4.—By the <i>Patricia</i> =Hamburg:			A. T. Morse & Co.....	4,500	Earle Brothers	2,500
A. T. Morse & Co.....	11,000		Poel & Arnold	1,500 6,000	AUG. 4.—By the <i>Grenada</i> =Trinidad:	
Rubber Trading Co.....	7,000	18,000	AUG. 15.—By the <i>Briez Huel</i> =Singapore:		Frame & Co.....	3,000
AUG. 5.—By the <i>Carpathia</i> =Liverpool:			Winter & Smillie.....	9,000	AUG. 8.—By the <i>Procida</i> =Demerara:	
Poel & Arnold	12,000		Rubber Trading Co.....	3,500 12,500	George A. Alden & Co.....	5,000
George A. Alden & Co.....	11,000		AUG. 17.—By the <i>Mesaba</i> =London:		Middleton & Co.....	3,000
A. T. Morse & Co.....	3,000	26,000	A. T. Morse & Co.....	4,000	Frame & Co.....	1,500 9,500
AUG. 9.—By the <i>Zeeland</i> =Antwerp:			AUG. 18.—By the <i>Aurania</i> =Liverpool:		CUSTOM HOUSE STATISTICS.	
Poel & Arnold	29,000		Poel & Arnold	10,000	PORT OF NEW YORK—JULY.	
A. T. Morse & Co.....	5,000		AUG. 19.—By the <i>Ras Issa</i> =Singapore:		Imports:	
Earle Brothers.....	3,500	37,500	Poel & Arnold.....	10,000	India-rubber.....	3,169,261 \$2,061,604
AUG. 11.—By the <i>Majestic</i> =Liverpool:			Winter & Smillie.....	10,000	Gutta-percha.....	30,156 13,726
Poel & Arnold.....	26,000		AUG. 19.—By the <i>Pretoria</i> =Hamburg:		Gutta-jelutong (Pontianak)	1,451,575 45,280
AUG. 12.—By the <i>Phoenix</i> =Hamburg:			A. T. Morse & Co.....	45,000	Total.....	4,650,991 \$2,120,510
A. T. Morse & Co.....	22,500		AUG. 22.—By the <i>York Castle</i> =Calcutta:		Exports:	
AUG. 15.—By the <i>Etruria</i> =Liverpool:			Poel & Arnold.....	33,500	India-rubber.....	52,954 \$35,360
George A. Alden & Co.....	26,000		AUG. 22.—By the <i>Satsuma</i> =Singapore:		Reclaimed rubber.....	330,460 35,802
AUG. 15.—By the <i>Cedric</i> =Liverpool:			Winter & Smillie.....	11,500	Rubber Scrap Imported.....	1,212,521 \$70,326
General Rubber Co.....	75,000		George A. Alden & Co.....	15,000	BOSTON ARRIVALS.	
Poel & Arnold	42,000		Pierre T. Betts.....	15,000		
A. T. Morse & Co.....	2,000	119,000	Robert Branss & Co.....	22,500 64,000		
AUG. 17.—By the <i>Oceanic</i> =Liverpool:			PONTIANAK.			
Poel & Arnold.....	13,500		JULY 25.—By the <i>Indravelli</i> =Singapore:			
AUG. 18.—By the <i>Aurania</i> =Liverpool:			Winter & Smillie.....	330,000		
George A. Alden & Co.....	22,500		George A. Alden & Co.....	110,000		
AUG. 19.—By the <i>Pretoria</i> =Hamburg:			Robert Branss & Co.....	100,000 530,000		
Poel & Arnold.....	49,000		AUG. 15.—By the <i>Briez Huel</i> =Singapore:			
George A. Alden & Co.....	6,500		George A. Alden & Co.....	225,000		
A. T. Morse.....	4,500	60,000	Robinson & Tallman.....	70,000		
AUG. 22.—By the <i>Arabic</i> =Liverpool:			Winter & Smillie.....	200,000		
Poel & Arnold.....	22,500		Robert Branss & Co.....	140,000 635,000		
AUG. 23.—By the <i>Vaderland</i> =Antwerp:			AUG. 19.—By the <i>Ras Issa</i> =Singapore:			
Poel & Arnold.....	45,000		Winter & Smillie.....	200,000		
A. T. Morse & Co.....	13,000	58,000	AUG. 22.—By the <i>Satsuma</i> =Singapore:			
AUG. 24.—By the <i>Georgie</i> =Liverpool:			George A. Alden & Co.....	375,000		
George A. Alden & Co.....	80,000		Robert Branss & Co.....	225,000		
General Rubber Co.....	55,000	135,000	Winter & Smillie.....	115,000		
			Robinson & Tallman.....	45,000 760,000		

OFFICIAL STATISTICS OF CRUDE INDIA-RUBBER (POUNDS).

UNITED STATES.				GREAT BRITAIN.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1904.....	2,496,700	299,077	2,197,623	June, 1904.....	4,700,976	2,238,992	2,461,984
January-May.....	31,994,423	1,461,909	30,532,514	January-May.....	26,208,896	15,310,070	10,898,826
Six months, 1904.....	34,491,123	1,760,986	32,730,137	Six months, 1904.....	30,909,872	17,549,062	13,360,810
Six months, 1903.....	28,568,764	1,567,915	27,000,849	Six months, 1903.....	29,328,208	19,415,872	9,912,336
Six months, 1902.....	27,142,090	1,852,299	25,290,691	Six months, 1902.....	26,287,968	15,150,688	11,137,280
GERMANY.				ITALY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1904.....	3,272,500	949,300	2,323,200	June, 1904.....	103,620	2,860	100,760
January-May.....	15,022,260	4,284,280	10,737,980	January-May.....	738,100	49,280	688,820
Six months, 1904.....	18,294,760	5,233,580	13,061,180	Six months, 1904.....	841,720	52,140	789,580
Six months, 1903.....	18,357,240	6,686,020	11,671,220	Six months, 1903.....	899,360	94,380	804,980
Six months, 1902.....	16,475,140	6,280,560	10,194,580	Six months, 1902.....	767,800	75,240	692,560
FRANCE.*				AUSTRIA-HUNGARY.			
MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.	MONTHS.	IMPORTS.	EXPORTS.	NET IMPORTS.
June, 1904.....	9,274,320	5,946,820	3,327,500	June, 1904.....	267,740	nil.	267,740
January-May.....	9,274,320	5,946,820	3,327,500	January-May.....	1,273,580	10,340	1,263,240
Six months, 1904.....	8,326,560	4,609,880	3,716,680	Six months, 1904.....	1,541,320	10,340	1,530,980
Six months, 1903.....	8,357,240	4,609,880	3,747,360	Six months, 1903.....	1,504,580	12,320	1,492,260
Six months, 1902.....	8,955,320	4,361,280	4,594,040	Six months, 1902.....	1,408,880	6,820	1,402,060

NOTE.—German statistics include Gutta-percha, Balata, old rubber, and substitutes. French, Austrian, and Italian figures include Gutta-percha. The exports from the United States embrace the supplies for Canada consumption.

* General Commerce.

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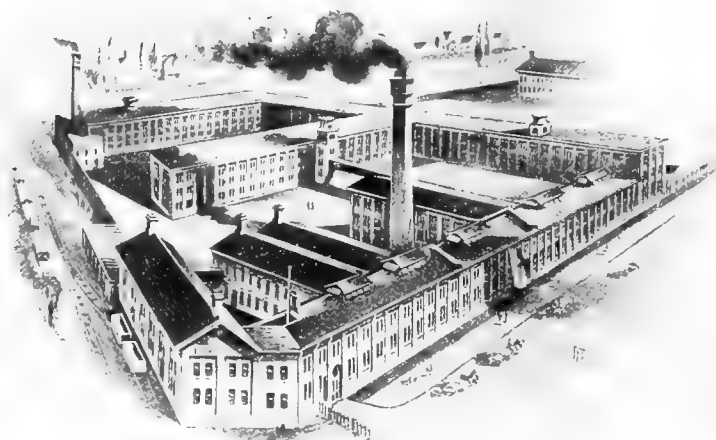
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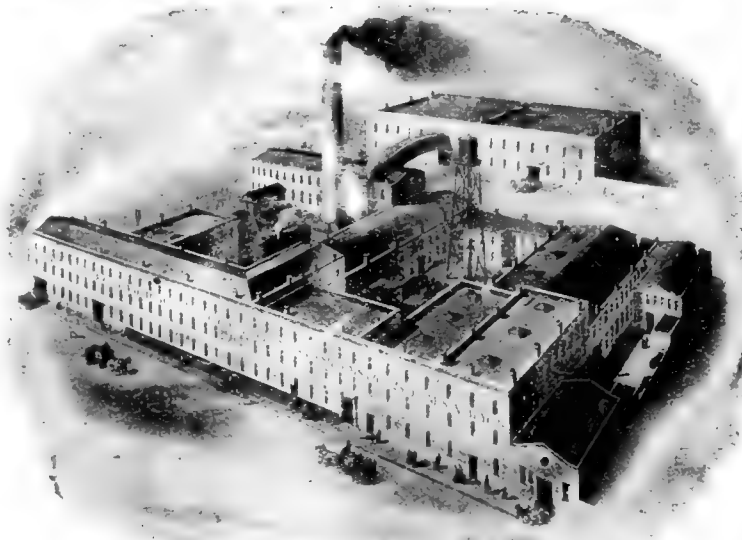
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